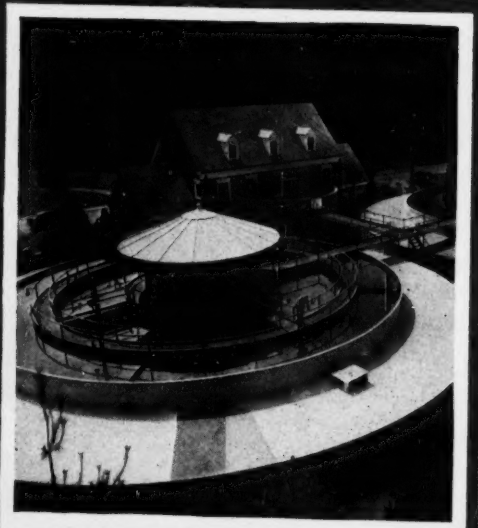
Chemical Week

February 14, 1953



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Chemical Week

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HOW TO USE

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The Firestone EXON line of resins offers many valuable properties to industrial manufacturers. In numerous applications, these resins can improve your product while they cut production costs.

In addition, to help you utilize EXON resins to your fullest advantage, the Firestone Chemical Sales Division makes the following technical services available to you:

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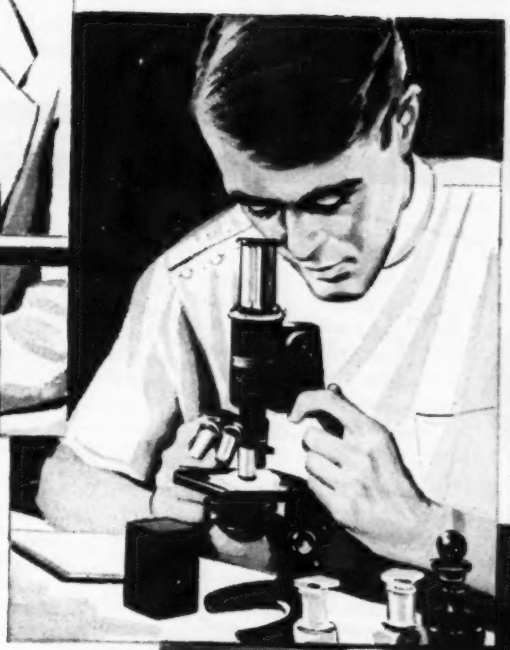

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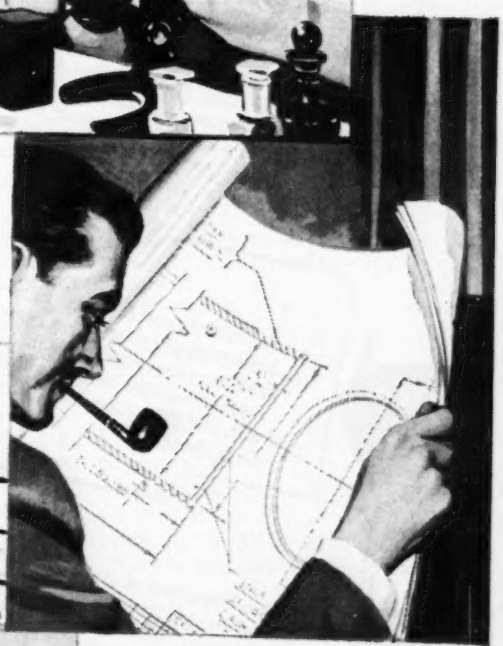

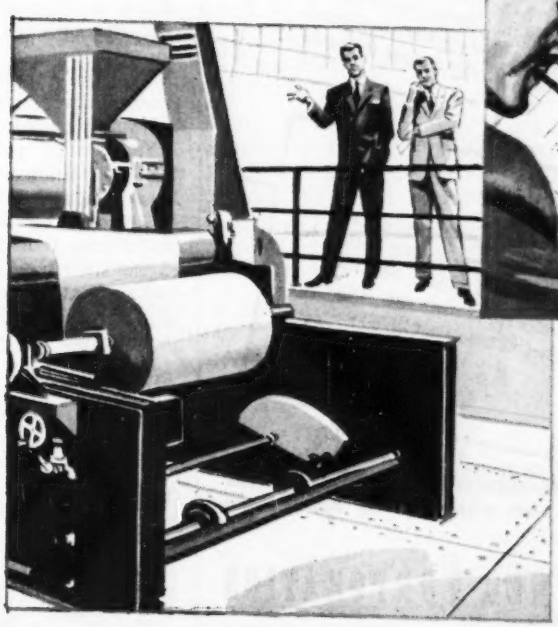

EXON

OPINION . . . . . .

Importers' Viewpoints

TO THE EDITOR: Reference is made to certain statements concerning importations by our company of phthalic anhydride during the year 1949 in an article entitled "Polythene in Disguise" (Jan. 31). May I request the privilege of your publishing . . . our viewpoint on this matter:

There is certainly no rivalry between chemical manufacturers and this concern in the importations of this phthalic anhydride. During a certain part of 1949 there was a definite shortage of production of phthalic anhydride in the United States and nearly all of these importations were actually ordered for one of the largest domestic manufacturers and users. . . . During that period, due to this shortage of supply, domestic manufacturers . . . were only able to make partial deliveries under annual contracts and were not freely offering phthalic anhydride for sale in this country.

We would like to make it clear that this case arose only on account of a special provision in our customs tariff relating to the importation of coal tar products. It is for this particular group of chemicals and not for other chemicals that the ad valorem duty may be assessed on the domestic selling price "provided the material is freely offered for sale to all purchasers in the United States *at the time of exportation.*" Our claim for a reduced duty, therefore, is only intended for and limited to a specific and short period during which phthalic anhydride was not freely offered in this country. The insistence upon the collection of a high duty rate during a time of shortage penalizes the foreign supplier as well as the domestic user, whose cost is being unnecessarily increased.

Your article creates the impression that importations similar to ours could be detrimental to the interests of the U.S. chemical manufacturers. We feel that during the above-mentioned period of short supplies, we filled a need and performed a service by being able to supply this product to the domestic manufacturers.

F. S. FALLEK
President
Fallek Products Co., Inc.
New York, N.Y.

TO THE EDITOR: The article, "Polythene in Disguise" (Jan. 31) apparently was inspired by . . . the Synthetic Organic Chemical Manufacturers Association, and is, therefore, biased. We will, therefore, appreciate your publishing this letter as an answer to that particular article. . . .

CHEMICALS OUTLOOK

Feb. 1953

This news bulletin about Wyandotte Chemicals products and their applications is published to help keep you posted. Perhaps you will want to route these and subsequent facts to other interested members of your organization. Additional product information, through Wyandotte research and technical service facilities, and trial quantities of Wyandotte products are always available upon request. May we serve you?

TO FORMULATORS AND COMPOUNDERS OF INSECTICIDES

High Gamma BHC -- containing 60-70 percent gamma isomer is available for immediate shipment. The product is a dry flake, easily handled in formulating equipment. Is readily soluble in the preparation of benzene hexachloride emulsifiable oil concentrates. Available for domestic and export shipment. Samples, information and prices upon request.

Pluronics* -- A combination of Pluronic L64 (one of Wyandotte's new nonionic surfactants) and a special anionic surface active agent has been found to be exceptionally effective as an emulsifier for DDT. A stable emulsion of 25% solvent solution can be prepared with as little as 2½% of the combination.

Wyandotte Pluronics are suitable for laying the dust of Parathion, as they are essentially nonfoaming at the proportions required. Send for sample quantities, stating your need.

TO CLEANING PRODUCTS MAKERS: IMPROVED DETERGENCY FACTOR IN WYANDOTTE CARBOSE*

Carbose -- New development in the manufacturing processes of the various grades of Wyandotte Carbose (Wyandotte's specialized grades of NaCMC) has resulted in a 10% across-the-board improvement in detergency factors over our own previous highs. The promoting characteristics of Carbose D make it ideal for formulations of household cleaners, dishwashing products, laundry compounds, scouring powders, etc.

Wyandotte Carbose reduces skin irritation . . . its emollient properties are ideal for dishwashing and carwashing formulations.

POWDERED CAUSTIC FOR METAL CLEANERS, BOTTLE WASHING, WASTE CLEANING

Have you tried Wyandotte Powdered Caustic in your metal cleaners, bottle-washing compounds or in products for industrial waste-fibre cleaning? Many manufacturers of industrial cleaning products are finding that our powdered caustic produces a more homogeneous mixture with better appearance than flake caustics when other ingredients are of a fine granular or powdered nature . . . and Wyandotte Powdered Caustic does not tend to segregate. Ask for trial quantities.

SEND FOR NEW PURECAL* BULLETIN

New bulletin on Purecals, Wyandotte's U.S.P. Precipitated Calcium Carbonate, shows how Purecal properties differ from properties of other U.S.P. precipitated calcium carbonates. Bulletin available on request.

Increasing use is being made of Purecals in drug and cosmetic formulations. Their purity and ultra-whiteness make them desirable as a base or pigment.

TO SAFETY DIRECTORS

Wyandotte has prepared large, easy-to-read wall charts illustrating procedures for safe handling of both Liquid Chlorine and Liquid or Anhydrous Caustic. Wall charts are available for your plant . . . ask for them.

*REG. U.S. PAT. OFF.

Wyandotte CHEMICALS

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OPINION . . . . . .

First, polyethylene is used to a very small extent—namely somewhere between 2% and 5%—as an admixture to petroleum waxes in the manufacture of waxed bread wrappers. This company at no time was or is interested in importing the polyethylene—or worse still, the polyethylene wax mixture from abroad—because first, this would be nonsensical in view of the small quantities; and secondly, prices are much higher than those in this country.

At the time the importation took place, this company tried by all means to get these small quantities involved from [local suppliers, who] . . . refused because there was no allocation for bread wrappers, and also they claimed the free quantities had to go to more important products. (Further investigation disclosed that these more important products amongst other things were perfume bottles.) . . .

We finally brought this to the attention of the Washington office of one of the national publications after which [one supplier] . . . consented to supply us with 500 lbs. a month, which was all we wanted.

In the interval . . . we were naturally forced to use our own ingenuity so as not to disturb our customers in the bread wrapper industry. And it is thus that we conceived the idea of using some polyethylene made abroad.

As the supplier abroad apparently had an understanding by which he would not supply polyethylene to this country, we actually had to ship U.S. microcrystalline wax abroad and have it blended there 50-50 with the foreign polyethylene and returned. This was necessary because a 50-50 blend constitutes a wax and no longer a resin. . . .

We may also mention that the very minute we finally received our allocation we stopped importing and purchased the material here and we find, in view of the above, your explanation of how this particular transaction took place not fair to our case—and thus by no means represents a "challenge to the protection of the American chemical industry." Nobody would import this material if the American chemical industry would consent to supply it, nor could anybody do it price-wise under normal circumstances. . . .

A. AUFHAUSER
Industrial Raw Materials Corp.
New York, N.Y.

We are pleased to let Readers Fallek and Aufhauser express their views. We are constrained to point out, however, that our story was based on official records, and not "inspired" by the S.O.C.M.A.—ED.

OPINION . . . . . .

Switch 'b' and 'f'

To THE EDITOR: And what are "bifers?"—p. 10, line 14, 24 January 1953.

MARTIN H. GURLEY, JR.
Manager
Duplan Corp.
Kingston, Pa.

To THE EDITOR:

The learned chemists of Du Pont
And Bakelite have shown their wont
To tweak the beard of a good judge
With language even he can't budge.
For from their polyethylene
And wax that's microcrystalline,
They stand before this able man
And swear they, by extraction, can
Obtain material that's fine
For making films that are first-line.
Of this we have no doubt it's true,
But making bifers—that we do!

IRV TUCKER
Rivera, Calif.

Eagle-eyed Reader Tucker is the most poetical of those who caught the "typo" in our Jan. 24 Newsletter.—ED.

DATES AHEAD.

Manufacturing Chemists' Assn., Inc., 1953 industry conference on air pollution abatement, Hotel Statler, Detroit, Mich., Feb. 26-27.

Nat'l. Electrical Mfrs. Assn., Edgewater Beach Hotel, Chicago, Ill., March 9-12.

Nat'l Assn. of Corrosion Engineers, 1953 conference, Chicago, Ill., March 16-20.

Amer. Trade Assn. Executives, Spring meeting, Mayflower Hotel, Washington, D.C., March 19-20.

Magnesium Assn., first Internat'l Magnesium Exposition, National Guard Armory, Washington, D.C., March 31-April 2.

Packaging Machinery Mfrs. Institute, semi-annual meeting, Sheraton Hotel, Chicago, Ill., April 18-19.

Assn. Consulting Chemist and Chemical Engineers, Inc., symposium, Hotel Belmont Plaza, New York, N.Y., April 21.

Penna. Mfg. Confectioners' Assn., seventh annual production conference, Lehigh University, Bethlehem, Pa., April 23-24.

Chem. Eng. Div. of Chemical Institute of Canada and **Amer. Institute of Chem. Engrs.,** joint meeting, Toronto, Canada, April 27-29.

Amer. Society of Mechanical Engrs., Deshler-Wallick Hotel, Columbus, O., April 28-30.

EVAPORATION in SECONDS!

The unique Rodney Hunt Turba-Film Evaporator gives incredibly fast *one-pass* evaporation of liquids, slurries and gases... especially heat-sensitive substances... all by continuous process!

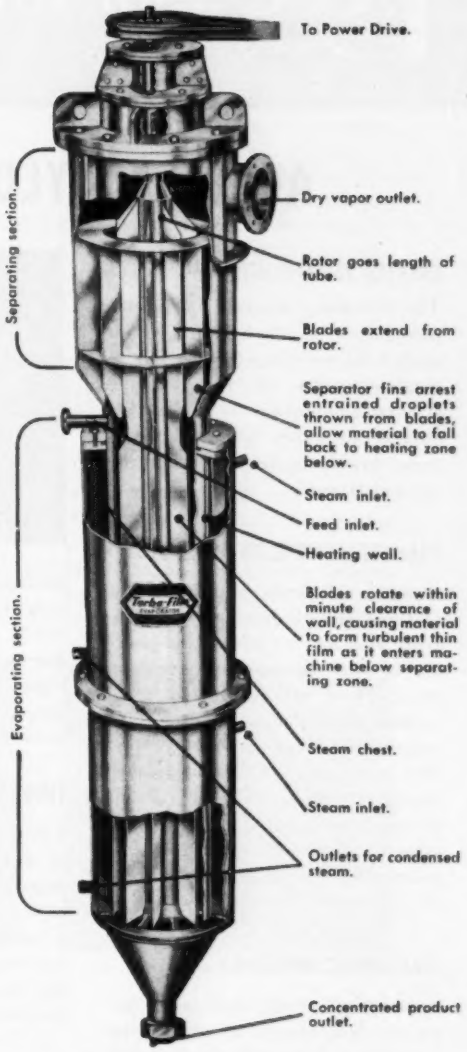
The Turba-Film Evaporator employs a totally different concept of evaporation. Makes heretofore extremely difficult evaporating processes simple and rapid. Actually evaporates most substances in a few seconds!

Here's how the patented Turba-Film® works. The substance to be evaporated is fed into the evaporating section. Here it is whirled against the wall by controlled-speed rotor blades. This forms a thin turbulent film, centrifugally held to the wall, which spins in a gravity flow through the chamber and out... completing the process. The vapors rise into the separating section where rotor blades beat out any entrained droplets and force them back through the evaporating section.

So thorough is this Turba-Film process that no substance requires re-circulation... the desired concentration is achieved in one pass! So fast is the Turba-Film action that proper heating is done in seconds. Colors, flavors, nutritional and other valuable properties are retained to a much higher degree... especially in heat-sensitive substances.

Because of its new principle, the Rodney Hunt Turba-Film Evaporator (Luwa Process, Switzerland) permits quick change-over from one product to another; prevents foaming and frothing difficulties; allows constant quality control to be maintained; permits concentration to very much higher viscosities and solids content than is practical with conventional equipment.

Please consider our complete engineering staff at your disposal for consultation on any possible Turba-Film application. We have the facilities for making test runs in our pilot plant: or we can provide a portable laboratory unit for use in your own plant. Mail this coupon for free color brochure explaining the Turba-Film Evaporator in detail.



Models available in ranges from 40 to 2500 pounds of water evaporation per hour. Stainless steel construction.

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RODNEY HUNT MACHINE COMPANY

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Name.....Title.....

Company.....

Address.....

City.....Zone.....State.....

Type of Industry.....Product.....

☐ I want details on your testing program.

CW 2-53

Life...on the Chemical Newsfront...

AERO* ACRYLONITRILE IN ADHESIVES

GREATER PERMANENCE IN ADHESIVES

The increasing demand for greater permanence in adhesives has necessitated the use of synthetic resins as bonding agents. For high bonding strength combined with excellent resistance to water, heat and fungi, resins based on AERO Acrylonitrile are widely used.

THERMOPLASTIC RESIN ADHESIVES

AERO Acrylonitrile is a basic raw material for hydrolyzed polyacrylonitrile, and for the important polyacrylic ester resins and their copolymers. These versatile compounds produce strong, flexible, chemical resistant bonds with glass, leather, textiles, and paper. The bonds are impervious to fungi, and are resistant to water and low temperature. Some types of these resins produce transparent films having permanent tack, ideal for pressure sensitive adhesives.

ELASTOMERIC ADHESIVES

AERO Acrylonitrile contributes important properties to the nitrile type synthetic rubber adhesives. Bonds obtained with this type elastomer are characterized by outstanding adhesion, and resistance to oils, greases, various solvents, water, fungi, and low temperature. The elastomeric adhesives are used with wood, metal, glass, rubber and fabrics. They may be applied by fusion or from solution, and high strength bonds are developed through vulcanization. Combinations of phenol and resorcinol resins with the nitrile type produce oil-resistant adhesives having the flexibility of the rubber, and the high strength of the resin. They are widely used in the automobile and shoe industries because they can bond together metals, rubber, plastics, fabrics, glass fiber, leather, wood, and resin-coated materials.

THERMOSETTING RESIN ADHESIVES

The polymers of formaldehyde with phenol, resorcinol, urea, and melamine produce outstanding adhesives of the thermosetting type. Recently, a formulation based on acrylonitrile was suggested as a self-bonding agent for mica. It was also proposed for bonding mica to metal and glass.

Cyanamid produces acrylonitrile and offers it as a base for the manufacture of the materials mentioned. The steadily increasing demand for acrylonitrile has necessitated increased production facilities so that we can meet your requirements promptly. Cyanamid's extensive experience in nitrogen chemistry is at your service. We shall be glad to cooperate with you regarding the use of acrylonitrile for improved products in your industry.

New Fortier† Plant to Make Cyanamid Basic in Production from Hydrocarbons

Seventeen miles above New Orleans, on the west bank of the Mississippi, Cyanamid is building its new Fortier Plant.

Expected completion date is early 1954, and production will include ammonia, hydrocyanic acid and acetylene. From these, the plant will make, among several other products, acrylonitrile and ammonium sulfate.

Acrylonitrile is the principal ingredient of the new widely publicized synthetic, wool-like acrylic fibers, such as duPont's ORLON Acrylic fiber and Carbide's DYNEL Acrylic fiber.

The plant will consist of outdoor-type manufacturing process units. Administration, maintenance, warehousing, and control laboratories will be housed in modern design, one- or two-story buildings. Chemical Construction Corporation, a Cyanamid unit, is architect-engineer and general contractor.

†pronounced "For-chay"

*Trade-mark

CYANAMID—the first to offer ACRYLONITRILE in commercial quantities in this country

1918—1953

1953 Marks 35th Anniversary of Initial Production of Phthalic Anhydride in United States

Thirty-five years ago, commercial production of phthalic anhydride was begun in the United States by a company of which American Cyanamid is now a successor.

Today, total U.S. output stands at over 250 million pounds annually, and since 1932 alone, American production has doubled and redoubled more than five times. Cyanamid's AERO* Phthalic Anhydride represents a substantial portion of the output of this important product.

AERO Phthalic Anhydride is manufactured under careful controls, to rigorous Cyanamid standards of purity and uniformity. Its free-flowing, clear, white flakes are exceptionally free from color and odor-forming impurities. Cyanamid offers AERO Phthalic Anhydride for bulk shipment in molten form.

Metallic Stearates—Versatility Unlimited

Few materials have demonstrated their ability to solve as great a variety of problems in as many areas of industry as have the metallic stearates.

ALL THINGS TO ALL PRODUCTS

This versatile family of chemicals has improved the performance of countless products, has contributed to the efficiency of many industrial and manufacturing processes.

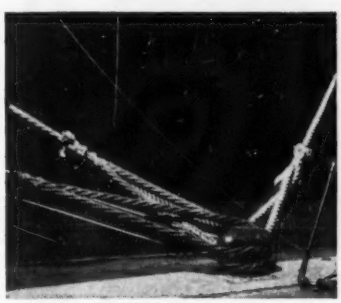
For example, metallic stearates are used as internal lubricants in cordage, as mold lubricants in the making of tablets and powdered metal parts. They make cosmetics adhesive, and improve the water resistance of rock wool, concrete and stucco. They are used as flatting agents and to improve pigment suspension in surface coatings. They prevent decomposition of ammunition and fireworks. New uses, as varied as these, are continually being found for the stearate family.

FINE STEARATES FOR FINE PRODUCTS

CYANAMID Metallic Stearates—Aluminum, Calcium, Magnesium, Lead, Zinc—are produced under rigorous chemical control, from raw materials to final packaging, in a modern continuous-process plant. This volume production of a limited number of products yields metallic stearates of a purity and uniformity formerly unobtainable.

CAN THEY WORK FOR YOU?

Cyanamid continually applies the results of research to the improvement of its metallic stearates. Grade specifications—even on the component fatty acids, as well as very low limits of lead and arsenic—have been revised consistent with ever-widening industrial use. Why not find out what CYANAMID Metallic Stearates can do for you. Send the attached coupon for your copy of "CYANAMID Metallic Stearates—Specifications."



For cordage, lubrication . . .

for rock wool, waterproofing.

*Trade-mark

American Cyanamid Company
Manufacturers Chemicals Department
30 Rockefeller Plaza, New York 20, N. Y.

CW2-53

Gentlemen:

Please send me the literature checked.

- ☐ The Application of Acrylonitrile in the Manufacture of Adhesives
- ☐ The Chemistry of Acrylonitrile ☐ Sample
- ☐ CYANAMID Metallic Stearates—Specifications ☐ Sample Type.....

Name.....

Address..... Position.....

AMERICAN Cyanamid COMPANY
30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

NEWSLETTER

Big corporate news of the week is the possible acquisition by Diamond Alkali Co. of Belle Alkali Co. (Belle, W. Va.).

Diamond has filed with the Securities and Exchange Commission a 60-day option, either to buy Belle's stock ($1,558,300 if all outstanding shares are acquired) or to pay $275,000 for the methane chlorination process by which Belle makes methyl and methylene chlorides and chloroform.

If Diamond buys up the stock (which is wholly owned by five people), it may well presage a sizable expansion in the West Virginia area. Since 1947 Diamond has owned a 1,750-acre tract of land at Eleanor, W. Va., about 40 miles north of the Belle plant, which overlies a large salt deposit.

While chemical process firms are cozying up to the idea of forming state associations to express their viewpoint on legislation (see p. 17), one process firm, Quaker Oats Co., is launching a program whereby its employees will "lobby" for lower taxes. All plants will participate, and the plants will try for community support as well.

Employees will be invited to join I.G.H.A.T. ("I'm gonna holler about taxes"), to write letters to Congressmen, and to circulate petitions among friends. The plant will provide membership buttons, sponsor enthusiasm-prodding luncheons, explain tax facts, put up displays.

The U. S. Department of Agriculture is now using radioisotopes to learn how fast and how far flies migrate. Such data have an important bearing on the spread of insecticide-resistant insects. So far USDA researchers have found out that black blowflies can cover 28 miles in 48 hours; houseflies don't spread out as rapidly—only 20 miles in 48 hours.

Meanwhile the USDA is trying to develop lures to bait housefly traps. Such obvious materials as molasses, brown sugar and malt are being used, but also under study are a number of synthetic organic chemicals which have shown promise in laboratory studies.

Applied research—like most of USDA's and the military services' —is taking over an increasingly larger share of college teachers' time and facilities. To redress the balance, National Science Foundation's Director Alan T. Waterman last week urged more Federal support for basic research in colleges and universities.

The point he stresses: Unless the colleges have financial support for basic research, they will be unable to discharge adequately their twin primary functions of turning out new knowledge and training additional scientists.

New mechanical development is significant to the chemical process industries. Kropp Forge Co. (Chicago) will undertake a big project to fabricate titanium parts for Army Ordnance. Preparation for the program involved three years' research, and installation of a 20-ton drop forge hammer, a 2-ton forging press, and additional furnaces. Already producing aircraft parts, the firm will step up metal consumption.

Turning out soil conditioners is no guarantee of a pot of gold. Henry A. Dreer, Inc. (Philadelphia), one of the early firms to hop on the bandwagon with its product Fluffium, has filed a petition in Federal Court to reorganize under Chapter XI of the Bankruptcy Act.

The company says in its petition that it is unable to meet current debts as they come due; and simply putting off its creditors won't solve the problem, since it needs new capital.

Reasons given for the company's plight: extremely heavy inventories, high accounts receivable, an excessive advertising budget. The silver lining: current sales are double last year's, and the company says it will be solvent when reorganization is completed. Plans for a new setup must be submitted to the court by March 2.

The cynosure for chemical firms so far this year seems to be liquid fertilizers. Close on the heels of Monsanto's Folium (CW Newsletter, Jan. 17) follows Du Pont Soluble Plant Food, a combination of nitrogen, phosphorus, potash, and essential trace elements. It can be either sprayed on the leaves or applied to the soil.

The new product will move fast to market. Du Pont says it will be available to home owners through local garden supply stores in time for spring gardening activities.

In another move this week Du Pont licensed American Enka Corp. to manufacture nylon textile fiber, bringing the total number of domestic producers to three. (The third is Chemstrand Corp., which was licensed in June, 1951).

Both Enka and Chemstrand will be entirely independent producers. Their licenses cover the entire process from the synthesis of intermediates to production of the finished fiber.

Another round has been completed in the fight over Texas' natural gas gathering tax. The three-judge Texas Court of Civil Appeals last week declared the tax constitutional, reversing the lower District Court. But the fight is by no means over: The next round is the Texas Supreme Court; final round—and it will assuredly go that far—is the U.S. Supreme Court. At stake is some $12 million a year.

But in readiness, should the gathering tax fail, are other measures which would cost producers—and eventually consumers—even more. A proposed tax on gas compressors (CW Newsletter, Jan. 31) would net $60 million; a processing tax—and 95% of the gas produced must be processed to remove liquids or sulfur—would raise $25 million; and a tax on long-term contracts would bring in $30 million.

Also aimed at raising gas prices are bills introduced in both branches of the legislature to establish minimum prices.

If any of these bills become law—and it's not likely that all of them will fail—gas-using chemical firms (as well as utilities, aluminum producers, etc.) will pay a big share of the levy.

Away back in 1900, long before Fleming, antibiotics were old stuff in Fort Madison, Iowa. Here are some recently unearthed notes by Dr. A. C. Richmond on one of his cases: "Sept. 9—Robert S., age 18, acute tonsilitis, temp. 104, very septic sore throat . . . Sept. 10—Still very ill, giving him the moldy bread with aspirin in capsules, three capsules four times a day . . . Sept. 11—Improvement is unbelievable. I shall give all my patients with fever and infections, mold. If I should tell the other doctors about this, they would think I'm crazy."

. . . The Editors

SODIUM metallic

This Hand is Holding Opportunity!

This is sodium, building block of industry! With its unique physical and chemical properties it is finding many new and economic applications.

If you are interested in this cooperative chemical, you'll find our new booklet, "Handling 'Ethyl' Sodium", extremely useful. This booklet, the result of our long experience as the world's largest producer of sodium, contains the latest information on the handling of this versatile metal in plant or laboratory.

We'll gladly send you a copy. And for any further help you may need, Ethyl offers you *Individualized Technical Service.* Our engineers will cooperate with yours to help you use sodium most efficiently in any of its many applications. Mail the coupon today.

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24 fact-filled pages on sodium. Describes properties, forms . . . how to transport, store, and handle. A valuable handbook for those using or interested in sodium.

CW 2-14-53

HOW CONSUMERS POWER

Helped an Industry

and a Small Town

GET TOGETHER

BELLAIRE IS a charming village in Outstate Michigan's vacationland, 46 miles from Traverse City.

It needed a small industrial plant to help stabilize year-around employment.

Lamina Dies & Tool Company is a successful manufacturing enterprise in Berkley, Michigan.

It needed a location for a small branch plant to produce guide pins and bushings for dies.

Bellaire seemed just the place — except for one thing.

Bellaire was one of comparatively few communities in Outstate Michigan that operate their own electric systems. This particular electric system did not have capacity enough to meet the needs of the proposed plant. To provide additional electric generating capacity is expensive, and it takes time.

Officials of Bellaire and Lamina talked with Consumers Power Company. We offered to buy the village electric system at a fair price, rebuild it and connect it with the Consumers state-wide electric network, thus assuring the industry of plenty of electric power for present and future needs.

The Village Council submitted the proposal to the voters, who approved it at a special election.

It was a happy solution for both Bellaire and Lamina.

The friendly cities and villages of Outstate Michigan offer many excellent locations for large or small industrial plants. And Consumers Power Company, supplying electric and natural gas service to more than three million Michigan people in 62 counties, likes to help communities and industries get together.

May we tell you more about Outstate Michigan? Telephone, write or wire for full information.

Black area on map shows territory served by Consumers Power Company

Check These Advantages of Outstate Michigan

★ Exceptionally High Percentage of Skilled Workers ★ In the Great Market Center of America
★ Wide Range of Materials, Parts and Supplies ★ Diversified Industries ★ No State Income Tax
★ Desirable Plant Sites ★ Dependable Electric and Gas Service at Low Rates
★ Excellent Living Conditions and Cultural Opportunities ★ A Foremost Vacation Area

N-32-

FOR MORE INFORMATION CONTACT **Industrial Development Department**
CONSUMERS POWER COMPANY JACKSON, MICHIGAN

BUSINESS & INDUSTRY . . . .

ALLIED'S EMMERICH: "Funds to provide expansion . . . capital."

Allied Changes Policy

Allied Chemical & Dye Corp. has informed its stockholders that, subject to market conditions and compliance with legal requirements, it intends to sell up to $200 million in long-term debentures. They are to be sold publicly through an underwriting group headed by Morgan Stanley & Co.

Booked as the largest single debt offering by an industrial company in the history of American finance, the sale will also be distinguished by the fact that it represents an important modification of financing policy. For a large part of its history, Allied Chemical has had no securities other than common stock.

President Fred Emmerich in a letter to stockholders, explained that the financing is to provide funds for expansion, for working capital, and other corporate purposes.

The long-term debentures are, however, to rank equally with the present bank loans. Sinking funds and redemption provisions are to be set up to permit retirement of the debentures as funds become available from the projects included in the expansion program (estimated to cost $150 million in 1953, and $100 million in 1954 "depending on future business conditions and other factors").

Some other industrial companies in recent years have raised more than $200 million on debt securities, but these borrowings have been made directly from life insurance firms rather than through publicly-offered issues.

Explosive Subject

Touchiest topic of the day in New Orleans is whether the city should permit fertilizer nitrate salts to be unloaded within the city limits, or whether some other Gulf Coast port should be allowed to have that bit of business.

With Southern cotton growers comprising one of the biggest markets for nitrate fertilizers, more than 150,000 tons of nitrate salts reportedly are planned for shipment to the port of New Orleans during the next few months before the growing season.

Only a couple of weeks ago, some New Orleans citizens were perturbed at the thought that this nitrate handling business might be diverted to Gulfport, Miss., or other ports along the Gulf Coast because of a labor dispute among New Orleans longshoremen. Some longshoremen felt the nitrates were too hazardous, that they should receive double pay rates for unloading the fertilizer, but eventually they decided they'd handle the material at regular rates rather than let the nitrates be unloaded elsewhere.

Now, however, City Safety Commissioner Bernard J. McCloskey is urging that ammonium sulfate nitrate and calcium ammonium nitrate be banned from the city's piers, along with ammonium nitrate. His sudden opposition stems from reports of the explosion aboard the nitrate-laden Finnish freighter Tirrenia in the Red Sea. Says McCloskey: "Let nitrate be unloaded some place remote from the city by those who are willing to handle it."

Texas Keeps Tabs

The growing importance of Texas as a chemical production center has received new emphasis—manufacturers in the state have united to form their own industry group, the Texas Chemical Manufacturers Council.

The group might be likened to a state-wide Manufacturing Chemists' Association. It will emulate on the state level what MCA has done on the national level.

The problems it has to face may be equally vexing. Texas legislators (*CW, Jan. 31*) have their eye on the chemical industry as a good source of new revenue. In addition, legislation on water conservation, and on air and water pollution could hit hard at some chemical producers.

First Feelers: The beginnings of organization came last fall when representatives from 10 Texas manufacturers met to discuss such an organization. They considered such a setup feasible, and hired attorneys to draw up bylaws for the group.

The 31 MCA members with Texas plants were invited to the first full-scale meeting. Twenty-one companies sent representatives, and the Texas Chemical Manufacturers Council came into being.

While much of the impetus came from companies that belong to MCA, membership in TCMC is to be open to any chemical company that conducts manufacturing operations in the state. There is no financial tie between the two groups.

Dow's "Dutch" Beutel was elected the group's president; Joe Mares of Monsanto, vice-president; and Rohm & Haas' Vincent Heinrich, secretary-treasurer. The council plans to hire a full-time executive vice-president.

Regional Interest: The Texas group, of course, is not the first such state organization. Probably one of the most succesful has been the Missouri group, which has been in existence more than 20 years. Membership here has not been limited to manufacturers, but includes any chemical concern with an interest in Missouri legislation. Membership totals about 140.

And proudly charting the growth of chemical industry throughout the 14 Southern states is the Southern Association of Science and Industry, with headquarters in Chattanooga. It boasts that chemical employment is increasing faster in the South than in any other section of the country.

The legislative aspect, naturally, is one which can best be stressed by a state organization. Such a group can keep tabs on the different bills before the legislatures. Too, such councils can help coordinate regulations on labeling or on economic poisons, so that companies selling over a multi-state area would not have to worry over more than a single set of regulations.

Tempest in a Reservoir

Like a miler settling into stride after the first lap, fluoridation proponents are surveying their position this week. General outlook: Although the number of cities which have begun treating their water has grown tremendously during the past two years—from about 100 to more than 650—the boom is leveling off somewhat as increasing criticism is leveled at the effort.

In order to determine just where fluoridation stands, the U.S. Public Health Service has made a special accounting. Specifically, it finds:

• As of Feb. 1, '53, 657 communities are listed as adding fluorides to drinking water. These cities and towns have a population of slightly over 13 million.

• As of the same date, fluoridation has been approved by 357 additional communities with a population of 15.3 million. These towns are in the process of installing equipment.

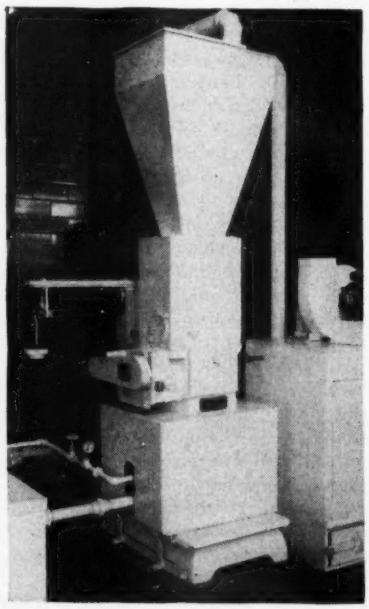
• Thus, when all communities get fluoridation plans into practice, more than 1,000 cities and towns with a population of over 28 million will be drinking fluoridated water.

• There is no regional trend apparent, but the number of converted communities in any particular area jumps appreciably when a large city begins fluoridating—bringing a dozen or so suburbs, which share the water supply, into the statistical picture. Maryland is an example. A year ago, only a handful of Maryland communities added fluorides. When Baltimore jumped on the bandwagon, however, 15 surrounding communities were added to the score, with a total population of 1.2 million.

• At present, the three top states fluoridating are: Maryland, with 182 communities operating and 2 scheduled; Wisconsin, with 93 operating and 47 to come; Michigan, with 37 and 14.

• There are three types of feeding equipment in use, one for liquid and two for dry methods. Solution feeders are particularly suited to small water systems; volumetric or gravimetric are a toss-up choice to communities serving water to around 200,000; and cities above that population are obliged, by and large, to use a gravimetric method.

SOLUTION FEEDER*: Fine for the hamlet.



VOLUMETRIC FLUORIDATOR: This one uses sodium silicofluoride.**

VOLUMETRIC FEEDER†: When the town grows up.

Those who Rant: Criticism of fluoridation has been widespread and increasingly vocal. It arises from a number of sources, with a varied assortment of pet peeves.

• Most bawling reproval raises the issue of "socialized medicine." Its proponents claim that water-fluoridation is the entering wedge for socialism.

• Equally adamant is the cry that fluoridation is "forced medication," contrary to Constitutional rights.

• A third issue questions the efficacy of the treatment. These opponents say that "many people have falsely come to believe that fluorine in the water will stop tooth decay in children, and even be a benefit to public health in adults." They claim both assumptions are untrue.

• A fourth issue questions the safety of the fluorides. Flaunting the slogan, "Everyone knows that they are rat-poisons," this group says we do not yet know what difference there is between naturally and artificially fluoridated waters. Furthermore, they discount the "propaganda" emanating over figures showing the decline in tooth decay in children over the span of five or six-year trials as being premature. "Sufficient time to reveal possible damaging after-affects on the bodies of the subjects of these experiments" is the ominous tone of their foreboding.

• Also, few large cities fluoridate. Critics cite Washington as made up of "spineless citizens, acting as test-tubes, and laud the voting records of the people of Chicago, Detroit, Milwaukee and Cleveland as having intelligently refused to submit.

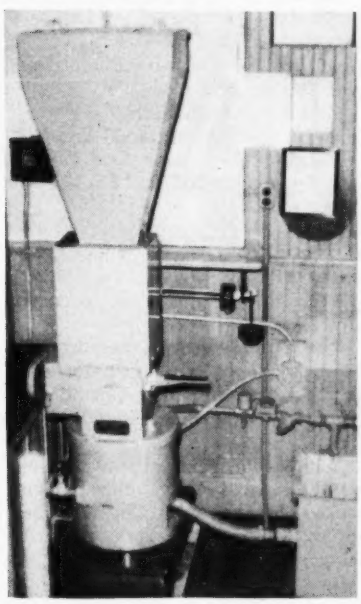
• Records from Grand Rapids, Mich., add further fuel to their fire. Grand Rapids, one of the earliest cities fluoridating, has detected an alarming unexplained increase in deaths from heart disease during the fluoridation period—1944-1948. Additional figures suggest the possibility that deaths from nephritis similarly rose 25%.

* At Crestwood, Wis., pop. 400.
** At Bartlesville, Okla., pop. 19,228.
† At Evansville, Wis., pop. 2,530.

Those who Rave: Proponents of fluoridation point to much scientific evidence which appears to give the program a clean bill of health, even though the proof is of short duration.

Major health bodies, the American Public Health Association, American Medical Association, and American Dental Association, have given their blessing, but always with reserve. AMA admits that not enough is yet known concerning the effect of fluorides on adults to make "positive statements concerning those effects."

But, Dr. Leonard Scheele, surgeon-general of the U.S. Public Health Service, told CW last week: "The epidemiological studies of fluorine in natural water supplies and artificial fluoridation have been classics. We in the Public Health Service have every reason to be proud of the work of some of our men in this field. Time will prove that this single discovery and development has been one of the great contributions to human health."



GRAVIMETRIC FEEDER*: Best for the budding metropolis.

Dr. Scheele points out that all innovations have met with resistance, and fluoridation is no exception. Therefore, to convince skeptics, statesmanship will have to be employed.

"Convincing is an art, and permits no arrogance or contempt of the opposition's point of view. In convincing, we must be completely candid and interpret the need for more research in this field."

Public Health has further found that the people opposed to mass fluoridation are bringing only indirect pressure on government agencies. Most of the national opposition is led by the Christian Science Church. But local agitation is more common, and generally involves buying advertising space in local papers, and appearances before the community council.

Evidence presented at these sessions is often merely of the "let's study it a little more" variety, rather than vociferous opposition to "forced medication." In Seattle, however, the opponents of mass fluoridation used a skull-and-crossbones emblem on their literature. The issue was submitted to a referendum, and the citizens turned down the proposal by more than two to one.

How it Stacks Up: An indication that the public is not yet ready to accept fluoridation of water is evidenced by the fact that when the issue is brought to a vote, more often than not it is rejected.

In other jurisdictions, the city health departments have been able to put in fluoridation almost unnoticed, and the complaints therefore rolled in after fluoridated water was already coursing through city water mains.

In still other localities, the opposition has been able to stop fluoridation by getting officials to withhold funds for fluoridating equipment and chemicals.

The controversial issue is still not settled because:

- The opposition has not yet demonstrated that at the rate of one part per million, fluoridated water is harmful.
- Public Health authorities and others who have done research on it, cannot unequivocally assert that it is harmless. No one will stake his reputation to so flat a statement, but all claim that to some degree it has proved beneficial.

Shared Safety

Voluntary industrial security precautions have reached a new peak as a result of the recent development of "mutual aid agreements" between industrial plants. These agreements, now being promoted by Federal Civil Defense Authorities, are very similar to the mutual defense aid pacts worked out between adjoining cities and counties for use in case of enemy attack.

Cooperation among plants on an area basis is the keynote to the plan's success. Through information circulated among various plants, managers will have on hand data informing them of the nature, extent and availability of firefighting and rescue equipment and trained personnel in surrounding plants. For example, the information may supply the fact that plants A and B have a certain amount of canvas fire hose equipped with certain sized couplings and fittings. In case of a disaster, the manager will know just where to locate the equipment that will best fit his needs. Thus, pooled equipment and personnel will be able to do an adequate job where regular services would not.

The plan, already in effect in Harrison, N.J., has been received with hearty approval by the Munitions Board's Office of Industrial Security. It is hoped that the effect of such disasters as the Texas City nitrate explosion of 1947 will be greatly lessened by stimulating interest in such informal aid pacts among industries in vulnerable areas.

Chemical Census

Present production of chemical plants in the Philadelphia area and possibilities for bringing more chemical works into the 11-county region are to be sized up in a survey to be made between now and next summer.

The survey will be sponsored by the research committee of the Greater Philadelphia-Delaware-South Jersey Council, and field work will be conducted by the Bureau of Economic and Business Research of Temple University's School of Business and Public Administration. John F. Adams, director of the bureau, will be in charge of the project.

This study will determine the scope and extent of the chemical industry in southeastern Pennsylvania, southern New Jersey and northern Delaware, according to Wroe Alderson, committee chairman. It will include a complete picture of employment in the industry—classification of present workers in the various plants and estimates on number of employees needed for new plants. The researchers will appraise sites with utilities and communications connections as possible locations for new chemical works.

EXPANSION. . . .

Oxygen: Burdett Oxygen Co. expects to double the size of its Youngstown plant (just completed) within the next two years.

Present capacity approximates seven million cubic feet of oxygen monthly.

•

Sulfur: Freeport Sulphur Co. has released plans for the development of a new sulfur mine—the company's

* At Fond du lac, Wis., pop. 29,936.

fourth in two years—at a salt dome deposit in the Louisiana marshland.

Size of the mining plant, to be built on the Chacahoula dome, will depend upon results of studies on construction problems associated with mining in a densely wooded cypress swamp.

•

• Standard Sulphur Co. plans to build a $450,000 mobile sulfur plant near Damon in Brazoria County, Tex.

The plant, with a daily capacity of between 150-200 tons of sulfur, will be in operation by next summer.

Plans call for the construction of the plant on skids, making possible its movement from place to place.

Financing of the operation has been underwritten by two New York investment houses.

•

Paper: Brown & Root, Inc., Houston, has revealed plans to build a plant to make newsprint paper from sugar-cane bagasse.

The new plant, pending approval in Washington, will be located at Locksport, will in the initial stages process approximately 17,250 tons of paper and dissolving pulp annually.

Construction will begin immediately after receipt of approval from Washington, with completion scheduled for late 1953.

LEGAL . . . . . .

Gypsum Files Suit: Asking $1.6 million in royalties on an alleged patent infringement, U.S. Gypsum is suing National Gypsum in U.S. District Court in Fort Dodge, Iowa, where both companies have plants. U.S. Gypsum charges that National refused to pay royalties on gypsum board manufactured and sold between Feb. 1, '48, and May 15, '51.

•

Plan Is Hush-hush: Imperial Chemical Industries and Du Pont have complied with the final judgment in their celebrated anti-trust case (*CW, Jan. 17*) by filing with Judge Ryan in New York and with the Justice Department in Washington their plan for ending their joint control of Canadian Industries Limited, Duperial-Argentina and Duperial-Brazil. Judge Ryan is ruling that the proposal will be kept confidential until finally approved. Justice Department has 60 days to propose modifications.

Meanwhile, ramifications of this case are appearing far afield. Plant Protection, Ltd., a British firm specializing in insecticides and weed killers, has agreed to be bound by licensing and cross-licensing provisions in the final judgment with respect to a certain patent granted to the firm by ICI. The patent, issued in Britain in 1946 and in the U.S. in 1951, covers simultaneous application of gamma benzene hexachloride and organic mercuric compounds to give seeds double protection: from seed-borne diseases in storage, and from wireworms in planting.

•

Gas, Gasoline Litigants: Any phase of the petroleum industry in Texas involves law suits, it appears this week. At Austin, the state's 98th district court:

• Received two more petitions by gas pipeline companies challenging the constitutionality of the state's gas gathering tax, with Lopeno Gas Co. and Delhi Pipe Line Corp. asking recovery of money they've paid to the state since last year.

• Dismissed the state's suit against 10 major gasoline distributors (including Cities Service, Conoco, Gulf, Humble, Texaco) in which the state accused the companies of price-fixing —charges that the companies said were a scattergun blast of generalities.

•

Companies Want Protection: Also in court this week are four natural gas companies in Charleston, W.Va., asking the U.S. district judge to wipe out certain orders by the West Virginia Public Service Commission. The companies say they would be seriously damaged by the state agency's orders instructing them to serve all new customers except those using more than one million cu.ft./month. The companies want the protection of previous regulations that were repealed by the agency's new orders.

•

Definition Worth $326,000: Official recognition that the Ethyl Corp. has owned its Baton Rouge, La., plant since 1938 means that the company will receive $326,720 as a refund of overpayment of unemployment compensation taxes. Ethyl took over full operation of the plant from Du Pont in 1945, but the state's Division of Employment Security decided to define that move as a reorganization, thus entitling Ethyl to transfer of Du Pont's experience rating records, which means a lower tax rate.

•

Roaches Beware: In a consent settlement with the Federal Trade Commission, Nash & Kinsella Laboratories, St. Louis, agree to discontinue advertising that their "2-Way Roach and Insect Spray" will kill insects in food without rendering the food unfit for human consumption. The company also will refrain from saying that the preparation is harmless to children and that when sprayed into the air it will kill flying insects.

COMPANIES . . .

Plans revealed by Gulf Alkali Corp. regarding purchase of land southeast of Baytown, Tex., have mushroomed.

In addition to its original purchase of 55 acres on Barker's Hill salt dome, Gulf Alkali is planning to build a short-line from the point where the South Pacific Railroad crosses Barber's Hill to Galveston Bay. Along the right of way, moreover, will be constructed a multiple-unit pipeline, designed to pipe brine to the new plant.

In connection with the plant itself, a loading wharf will be placed on the Cedar Bayou Channel.

Ground-breaking is scheduled within 90 days, and partial production is expected within 7 months. (Salt brine, requiring a minimum of processing will also be produced.)

Gulf Alkali further intends:

• To make its railroad available to a carbon black plant along the line.

• To use natural gas for its own power production.

• To use the mercury-cell process in the production of chlorine and caustic soda.

• To sell all its anhydrous caustic soda in export trade.

The plant site was acquired by Gulf Alkali with the "tremendous help" of the Baytown Chamber of Commerce, eager for new industry as a security hedge.

Material financial aid was also supplied by local Texas citizens, and backed by Intergulf Chemical and Supply Corp., New York, Gulf Alkali's export sales agency.

Background work for the over-all project has been in the works since Gulf Alkali was founded in April, '51. Its obvious activities since conception, therefore have been limited—awaiting the big break.

•

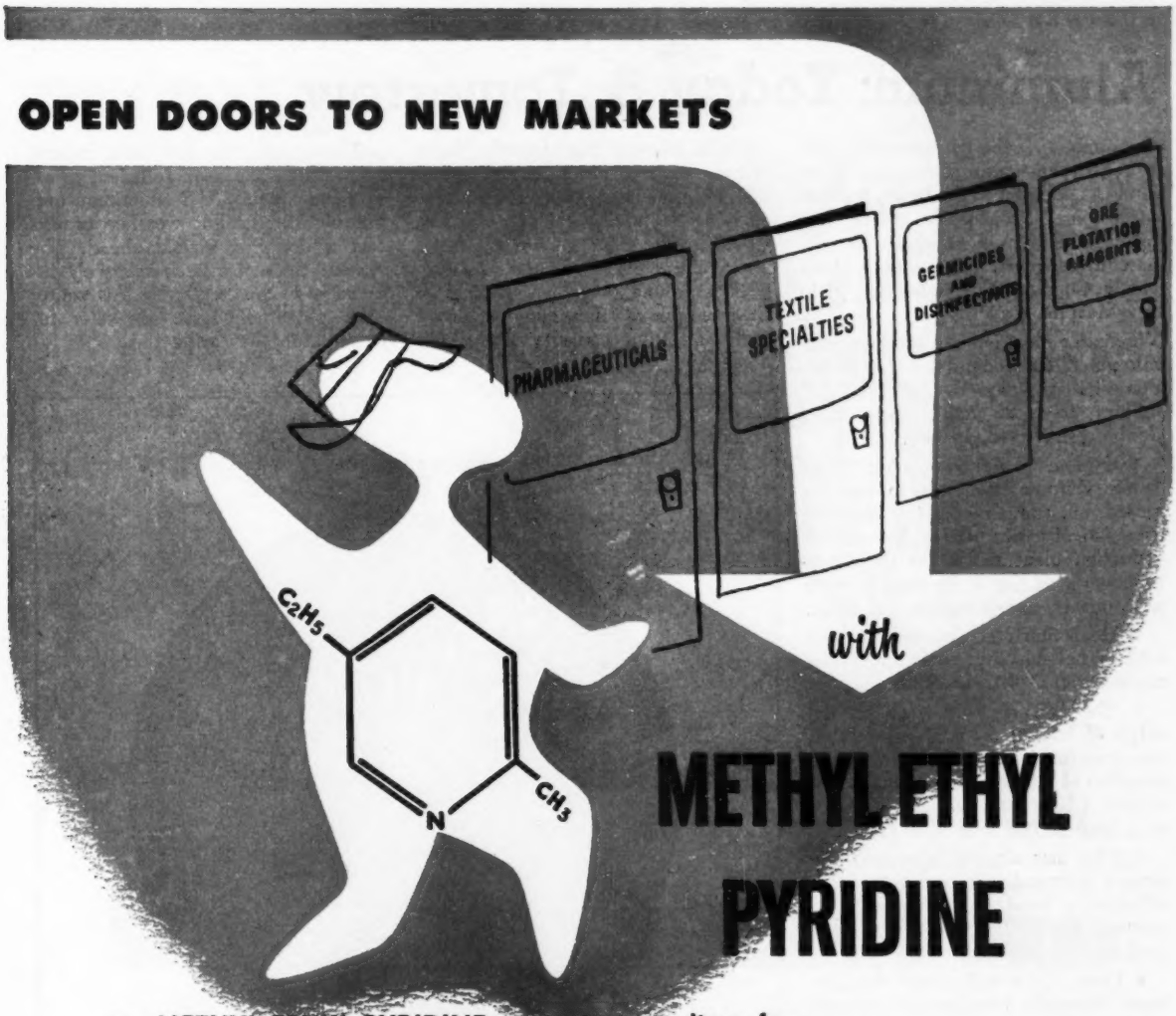
Monsanto Chemical Co. has formed a new division, the Overseas Division.

Designed to supervise all of Monsanto's interests outside the U.S., including the sale of all the company's products abroad, the new division is designed to enable Monsanto to strengthen its participation in world-wide markets.

•

Directors of the Girdler Corp. and the National Cylinder Gas Co., Chicago, have voted to merge the two companies. Action is subject to the approval of stockholders of the two companies, and will be passed upon this spring.

OPEN DOORS TO NEW MARKETS



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Aluminum: Today & Tomorrow

Consummating the government's post-Korea expansion program, the Wheland Co., Chattanooga, Tenn., is about to become the nation's fourth new primary aluminum producer in the past three years. (The others: Anaconda Copper, Olin Industries, Harvey Machine Co.)

Wheland's decision to produce aluminum officially completes U.S. plans: domestic capacity by 1955 of 1.7 million tons annually, more than double pre-Korea capacity.

Complete plans concerning Wheland's venture have yet to be disclosed, but company officials hint that selection of a site for the $50 million reduction plant will favor the Chattanooga area, in a location blessed with power, transportation and labor.

A Head Start: To sweeten the deal with Wheland, the government has made a series of concessions:

- The DPA is this week on the verge of issuing an 85% accelerated tax amortization certificate for construction of a $70 million primary aluminum plant with annual capacity of at least 50,000 tons (*CW, Feb. 7*).
- DPA has already approved the project informally in order to give Wheland a head start on private financing—reportedly by New York banking interests.
- Later, DPA will direct the Defense Materials Procurement Agency to sign a five-year market guarantee pact with Wheland. But first, the company must complete its private financing and officially specify its sources of raw materials and power. (Wheland claims to have power commitments from TVA.)
- In the contract, there will be a further government pledge—an agreement to buy any aluminum that Wheland is unable to sell on the open market. The price: a weighted market price, taking into consideration going prices of the "big three" aluminum producers, and Wheland's share of the market (estimated at 2.1%).
- In return, Wheland will give the government first call on two-thirds of its production annually. (Wheland intends to make at least two-thirds of its output available to non-integrated aluminum consumers, since such sales will be deductible from the government's optional quota.)

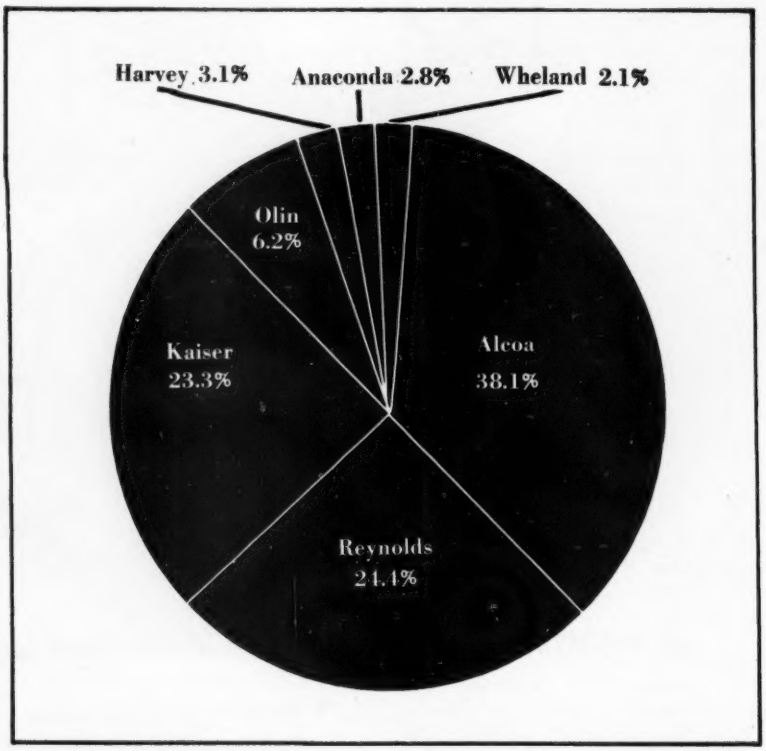
Coming Up: Wheland's estimated output more than takes up the slack 36,000 tons of proposed expansion that has been unsubscribed since DPA certified Harvey Machine Co. for a fast tax write-off last Dec. Here's how the field now lines up for 1955: Alcoa 38.1%; Reynolds, 24.4%; Kaiser, 23.3%; Olin, 6.2%; Harvey, 3.1%; Anaconda, 2.8%; Wheland, 2.1%.

Talk around Washington hints of an extension of aluminum expansion goals, resetting capacity sights. Alcoa's plans for a 200,000-ton plant at Skagway, Alaska, temporarily snagged because of Canada's refusal to allow diversion of Yukon water into Alaska, would presumably fall into this category.

Water Trouble: The big problem in primary aluminum production is to locate near the source of low cost electric power. (And a further hint to future government-stimulated aluminum expansion is the survey of at least one management engineering firm to locate such sites.)

Heavy production losses, incurred because of drought-created power shortages in the Pacific Northwest and the Tennessee Valley, may cause retention of aluminum controls past June 30, the date the present law expires.

The drought has now been broken, and rainfall has been sufficient to assure full-capacity U.S. aluminum output by March; but weather experts cast a doubtful glance ahead. The reason: there has been relatively little snow in the Northwest this winter—the potential source of water for power after the spring thaw.



ALUMINUM LINE-UP FOR '53: To the 'Big Three' . . . . add four more.

In addition to the water hazard, many defense mobilization officials advocate retention of aluminum control to permit resumption of large-scale government stock-piling, which ended when the Korean war began.

Lure to Enterprise

Philippine legislators have been wracking their brains for years in an attempt to find some legal lure to encourage their countrymen to invest in productive enterprise.

Now Businessman-Senator Gil J. Puyat* has come up with an idea. He has introduced a bill in the legislature to authorize the refund of income tax

* Former vice-president, Rotary International; former president, Philippine Chamber of Commerce.

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f) Improved water and soap resistance of film
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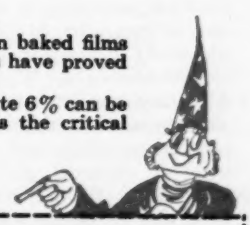
h) Hexogen Rare Earth Octoate 6% can be used where discoloration is the critical factor in the baked film.



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paid on incomes which have been invested in industrial equipment.

Strictly as a tax incentive for new capital investment, the proposed bill is a complicated piece of legislation. But, if passed, its result may prove a real boon to American investors in the islands, rather than to the Philippine businessmen.

Today, U.S. companies have been plowing their profits back into Philippine business (primarily the manufacture of antibiotics, cosmetics, and soap) without any special gain except saving the 17% exchange tax on profits they might have repatriated.

In effect, the bill provides that for every $1,000 tax-paid net income earned since 1951 and invested in productive enterprises, the income tax will be refunded. As a trailer, repayment would be contingent upon the investment of a second $1,000 from earned surplus of previous years, from money earned abroad, or from loans.

To further discourage withdrawal of the investment after the tax has been refunded, the Puyat bill specifies that the refund be spread over a three-year period.

Net results would give a company now paying the 17% income tax a 2.8% greater return on all new capital investment.

Without Nostalgia

In chemical plants, the prosaic present is so much better than "the good old days" that old-timers, upon retirement, rarely indulge in pining for the pre-World War I past of unheated buildings, unchecked fumes, and few or no safety devices.

Improvement in working conditions has kept pace with the industry's increase in number and quality of its products, according to Harry Thompson, retiring after 51 years in chemical works in England and America.

Now touring the United States on a five-month vacation trip, 65-year-old Thompson says that most of the progress in health and safety conditions in chemical plants has been made during the past 10 years. When he started working in a chemical plant as a 14-year-old plumber's helper, there were "no locker rooms, no towels or soap, no hot water, no safety goggles, no first aid."

Actually, it was the fumes that aroused Thompson's boyhood interest in chemicals and enticed him to deliver hot lunches free to chemical workers so that he could get into the plant near his home and watch the distilling units. His first paid job was at John Riley & Sons' Chemical Works in Hapton, Lancashire, England, and he worked there for 11 years. His starting wage was about $2.20 a week, and after annual promotions that culminated in his becoming an operator in the sulfuric acid department, he was earning $9.62 a week.

Unmoved by Merger: The same day that he arrived in this country, April 15, 1912, he got a job with Cochrane Chemical Co., Everett, Mass., a firm that produced a wide range of chemicals. Thompson kept working at that same plant when Cochrane merged with Merrimac Chemical in 1917 and when the company later was acquired by Monsanto, serving in nearly all units of the plant —ammonia, sulfuric acid, nitric acid, acetic acid, bisulfite, distillation, pilot plant and others. He became foreman of the distilling building in 1925, moved to the pilot plant in 1946, and ended his career as bisulfite foreman.

Thompson represents that group of old-time production men whose working lives spanned the first half of this "chemical century." They contributed to the chemical industry's growth, and took a leading role in development of safety techniques. Thompson, whose safety suggestions included installing radiators to keep crockery doors and pipes from "frosting" on winter nights so they wouldn't crack and spill acid when heated, opines:

"In those days, there were no safety programs. A man devised his own safety rules. The right kind of man will do that even now."

Upper Level Unionizing

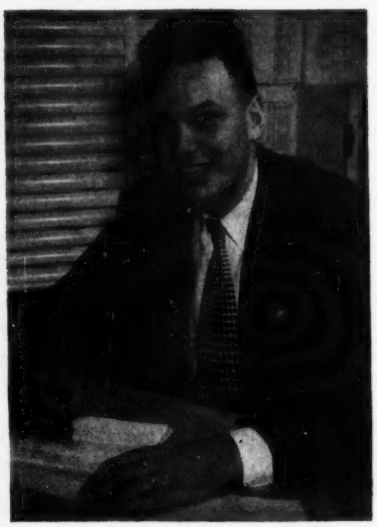
Next week in Los Angeles, a new association, aims of which include organization of all non-supervisory chemists and chemical engineers into collective bargaining units, will hold its first national convention.

The new organization is called Engineers & Scientists of America, abbreviated ESA, and its leaders consider it a bona fide trade union intended "to promote the economic, professional and social welfare of engineering and scientific employees."

For the past year, ESA has been functioning on a temporary basis, headed by President Joseph Amann of Minneapolis. It resulted from a proposal to merge two regional predecessors, the National Professional Association of Engineers, Architects and Scientists (abbreviated NPA) and the Council of Engineering & Scientific Employees (CESE). NPA was formed on the Pacific Coast in 1946, while CESE sprang up in the East in 1950.

Launched at Newark: Member units of NPA and CESE sent delegates to Newark, N.J., in August, 1951, and there it was decided "that the time and conditions were proper for establishment of a national organization for engineering and scientific employees." A constitutional convention was held in Chicago last February, and the executive committee held its first meeting in Minneapolis last September.

The by-laws adopted in Chicago provided that the ESA would be "legally activated" when its constitution had been ratified by eight local units, and that event took place last Dec. 31 when the Association of Professional Engineering Personnel of RCA at Camden, N.J., announced its ratification. Thus solidified, ESA will try to put itself on a more permanent footing at next week's convention.



CHRIS GRUBB, MCGRAW-HILL

TAFT: To counter "backward drag" on salaries, he prescribes collective bargaining for scientists.

Cool Toward AFL, CIO: Principal spokesman for ESA during its infancy has been John E. Taft, ESA vice-president, who's employed as an engineer at the Sperry Corp. plant at New Hyde Park, N.Y. Taft, a personable young man with an impatience to propagate the unionizing faith, says his association will have three basic functions:

- Representing scientific and en-

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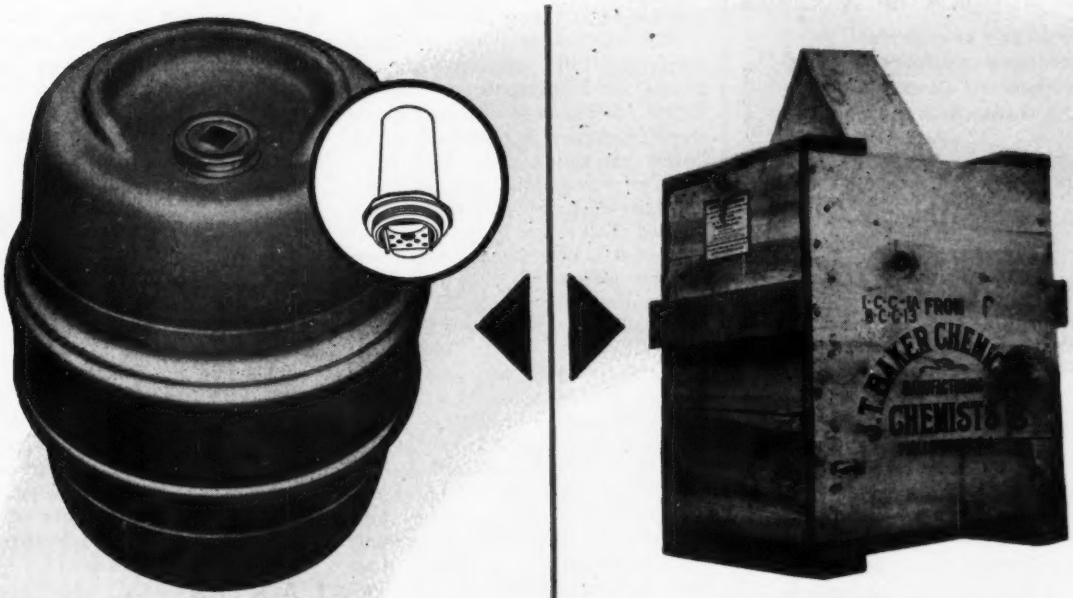

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gineering employees before government bodies, and serving as their "voice" in presenting their views to the public and the press. (He's candid enough to use the term "lobbying.")

- Acting as a statistical clearinghouse on salaries, job evaluation and industry evaluation surveys, and supplying this information to member units.
- Organizing new member units.

ESA will not have any individual members, Taft says; its member groups and prospective member groups are blocks of engineering and scientific employees organized as collective bargaining units. ESA won't interfere with member group's activities, but will provide assistance if requested. Taft makes it clear that ESA at present is not planning to affiliate with the AFL or CIO; the ESA leaders are afraid their association would be "swallowed up" in such a federation.

The Salary Stimulus: One of the ESA's prime purposes, of course, is to help its member units obtain salary increases. Taft is convinced that this effort is constantly hindered by the "backward drag" effect of lower salaries paid to technical employees who aren't represented by some bargaining agent. Accordingly, he figures, the need for organization of such employees "is extremely keen."

Greatest success by any ESA member unit in recent months was the new contract for some 4,500 scientists and engineers employed by Western Electric in 48 states and 14 foreign nations. They are members of the Council of Western Electric Technical Employees, which was certified by NLRB last June as bargaining agent for all non-supervisory W. E. engineers and scientists.

ESA will be financed by an assessment on member units at the rate of $4/year per individual member. Taft says dues of most present and prospective member units now average $25/year, so the assessment on each local unit would amount to about 16% of its budget.

Washington Program: Amann and Taft both have gone to Washington at various times to speak for the ESA, and a representative may be kept at the national capital while Congress is in session.

ESA's legislative program includes retention of the National Labor Relations Act's definition of a professional employee and its guarantee of his right to choose a bargaining agent if he wants to. However, ESA wants an amendment to the Taft-Hartley law to re-define supervisory employees; it feels that too many engineers and scientists are now disqualified from union membership because they are improperly classified as supervisors.

Also favored by ESA: Liberalization of the Fair Labor Standards Act, with inclusion of technical employees.

No Clear Field Yet: Because of its promising start and steady growth to date, ESA appears to have a fairly good chance of becoming the predominant organization for engineers and scientists in this country; but it doesn't yet have a clear field for expansion.

Among other already-organized unions that would like to represent the nation's technical employees are the American Federation of Technical Engineers (AFL), National Association of Broadcast Engineers & Technicians (CIO), and the National Federation of Salaried Unions (*see also CW, Apr. 19, '52,* "Lab-Coat, Slide-Rule Unions").

But while its momentum is still strong, ESA is planning to start publishing a periodical for its members, hire full-time staff workers, and in general go into the business of being the union that, its leaders hope, will soon speak for the majority of the country's engineers and scientists.

LABOR . . . . . .

No Nitrate Premium: Three labor disputes affecting the chemical processing industries are settled, permitting resumption of such operations as unloading of fertilizer grade ammonium nitrate at New Orleans:

- Persuasion by their union's Southern district officials apparently convinced New Orleans members of the International Longshoremen's Association (AFL) that they should unload calcium ammonium nitrate at the straight-time wage rate of $2.08/hour. At first, it was reported that members of the ILA local for white men were holding out for double-time pay while members of the ILA's local for Negroes were willing to work the cargoes for straight time. The tie-up ended soon after Frank Yaeger of Galveston, ILA district president, went to New Orleans and ordered the longshoremen to drop their request for "hazardous material" pay rates. About 150,000 tons of the fertilizer were in the three ships that started the dispute, with more ships en route to the port.
- Agreement that workers who hadn't taken their 1952 vacations before the strike started last Aug. 12 would be permitted to take that much time off this year helped to end a 146-

day strike by members of the Oil Workers International Union (CIO) at Swift Technical Products, Hammond, Ind. Gains claimed by the union include a 6¢/hour wage increase and rewording of contractual clauses to "eliminate many of the grievances that had piled up over the years."

• Sixtieth strike at the atomic energy plant in Paducah, Ky., ended abruptly with subcontractor M. W. Kellogg & Co. and the AFL Teamsters Union agreeing to submit the issue to arbitration. The Teamsters Union, representing some 800 truck drivers, set up pickets to push efforts to organize Kellogg's payroll and material checkers, stores clerks and expediters.

•

Strikebreaking Called Sinful: On the other hand, new or continuing strikes pushed obtrusively into the chemical news this week:

• Construction work on the gaseous diffusion plant being added to the atomic energy facilities at Oak Ridge, Tenn., came to a stop because of a walkout by some 300 AFL Operating Engineers in a dispute over whether attendants should be posted at automatic pumps being used to drain water from low lands at the plant.

• Demanding increased wages and other benefits, about 140 AFL Rubber Workers left their jobs at Goodall Sanford's plant in Reading, Mass. Their pickets persuaded members of other AFL unions to respect the picket lines.

• In southern Louisiana, where several strikes have been marked with violence that accompanied attempts to operate the plants with non-union workers, a Catholic priest is backing the unions by telling persons who have been working in the struck plants that "no one should cross a picket line when a strike is just." The Rev. Jerome A. Drolet, pastor of St. Charles Church at Thibodeaux, La., and executive secretary of the Louisiana Social Action Committee, has declared that "strikebreaking is a sin." One of the strikes is at New Iberia against Jefferson Island Salt Co. The state's Employment Securities Division has ruled again that the AFL strikers are not eligible for unemployment compensation, and a grand jury is probing reports of strike violence. At Elizabeth, the two strike-bound paper companies, Calcasieu and Southern Industries, are offering $2,500 reward for evidence leading to conviction of anyone committing violence during the strike.

•

More Labor Vexations: Strikes aren't

Chemical expansion soars high and fast these days. And it will be a case of "ceiling unlimited" for some time to come.

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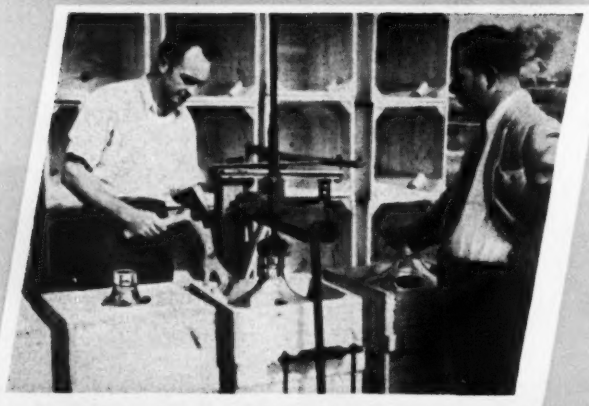
The Case of the Acid Carboy . . .

by GAYNER



CHAPTER ELEVEN

One of the most important steps in the manufacture of glass carboys is the packing and preparation for safe shipment. And that's where Paul Counsellor comes into the Gayner Glass picture.

For seventeen years, Paul has served in a supervisory capacity, following in his father Dave's footsteps and developing into one of the most versatile and efficient supervisors on the Gayner staff of glass-making experts.

The illustration shows Paul checking the packing of 13-gallon MCA standard glass carboys. Performance to exact standards and close inspection of box, cork and bottle assure delivery of perfect packages meeting I.C.C. requirements. This unusual care in packing combines with the following eight "time-proven" points to make Gayner Glass Carboys the favorite acid and chemical carrier of the process industries for almost 60 years.

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7—Box is clear, sturdy, seasoned white pine. Bottle easy to install; convenient to handle and store.

8—Approved by Bureau of Explosives. MCA Standard 13-gallon carboy bottles.

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the only form of labor difficulty with which employers can be plagued, other chemical companies are finding out:

• Vitro Chemical, operating the uranium concentrates mill at Salt Lake City, is in Dutch with the Wage Stabilization Board for alleged payment of more than $20,000 in unauthorized wages. WSB says Vitro granted general wage increases in February and June of 1951 without WSB approval. Under the law, the entire amount of wages paid during the violation period (which in this case would amount to nearly $450,000, according to WSB) is illegal, but the usual penalty is disallowance of the amount of "excess" wages as a business expense for income tax purposes.

• Even before Du Pont filed its written brief on the unfair labor practices charged by the International Chemical Workers Union (AFL) at the Neoprene plant near Louisville, Ky., the company was hit with similar accusations from another source. The new charges have been lodged with NLRB by the United Gas, Coke & Chemical Workers (CIO) in connection with its efforts to organize employees in the Cellophane and Cel-O-Seal plants at Buffalo, N.Y. Another organizing drive appears headed for the Du Pont-operated Indiana Ordnance Works, Charlestown, Ind., with ICWU distributing handbills to the workers as a preliminary move.

• Dissident members of the United Rubber Workers (CIO) are asking a state court to keep Firestone from switching their group health and accident insurance policies from one insurance company to another. The change was requested by union officials as a means of saving on amount of premium payments. The 14 nonconcurring union members say they'll lose certain benefits if the policies are changed, and contend that the union had no authority to ask the company to make the switch.

• So far, peace-making pleas by the Federal Mediation & Conciliation Service have staved off a strike at the atomic energy plant operated by American Cyanamid near Idaho Falls, Idaho, but there's been a nervous strain ever since the CIO Oil Workers served a 48-hour strike notice. After two days and nights of futile mediation meetings in Washington, the parties agreed to let a fact-finding panel be set up to investigate and then recommend a settlement.

•

New Cyanamid Pacts: Three local unions, two in the AFL and one in the CIO, have signed new contracts

B&I . . . . . .

with American Cyanamid. In each case, there's a wage increase of about 3¢/hour. Plants covered are at Wallingford, N.J., and Stamford, Conn., at which plants ICWU is bargaining agent, and at Willow Island, W. Va., where employees are represented by Gas-Coke.

FOREIGN. . . . . .

Cyanamide/Spain: The Nitro Hodro Co., Spain, in collaboration with an Italian chemical company is building at Monzon a plant for the manufacture of calcium cyanamide in granulated form.

•

Sulfuric Acid/Venezuela: Manufacturas de Algodon, Maracay, Venezuela, is building the first sulfuric plant in Venezuela, with production expected early this spring.

Daily output is estimated at 15 metric tons.

Crude sulfur will be used in the process.

•

Fertilizers/India: Two new fertilizer plants near Sindri, India, are to be set up with American aid. Construction is scheduled to start in 1954.

The first plant, manufacturing urea and ammonium nitrate, will cost around $9 million.

The second, manufacturing methanol, will require only setting-up costs, as the plant has already been acquired from German materials.

KEY CHANGES. . .

Richard C. McCurdy: From general manager, Royal Dutch Shell companies, Venezuela, to president, Shell Chemical Corp., New York, N.Y.

John T. Madden: To member of the board, W. R. Grace & Co., New York, N.Y.

William P. Gage: From vice-president, Shell Chemical Corp., to president and a director, Grace Chemical Co., New York, N.Y.

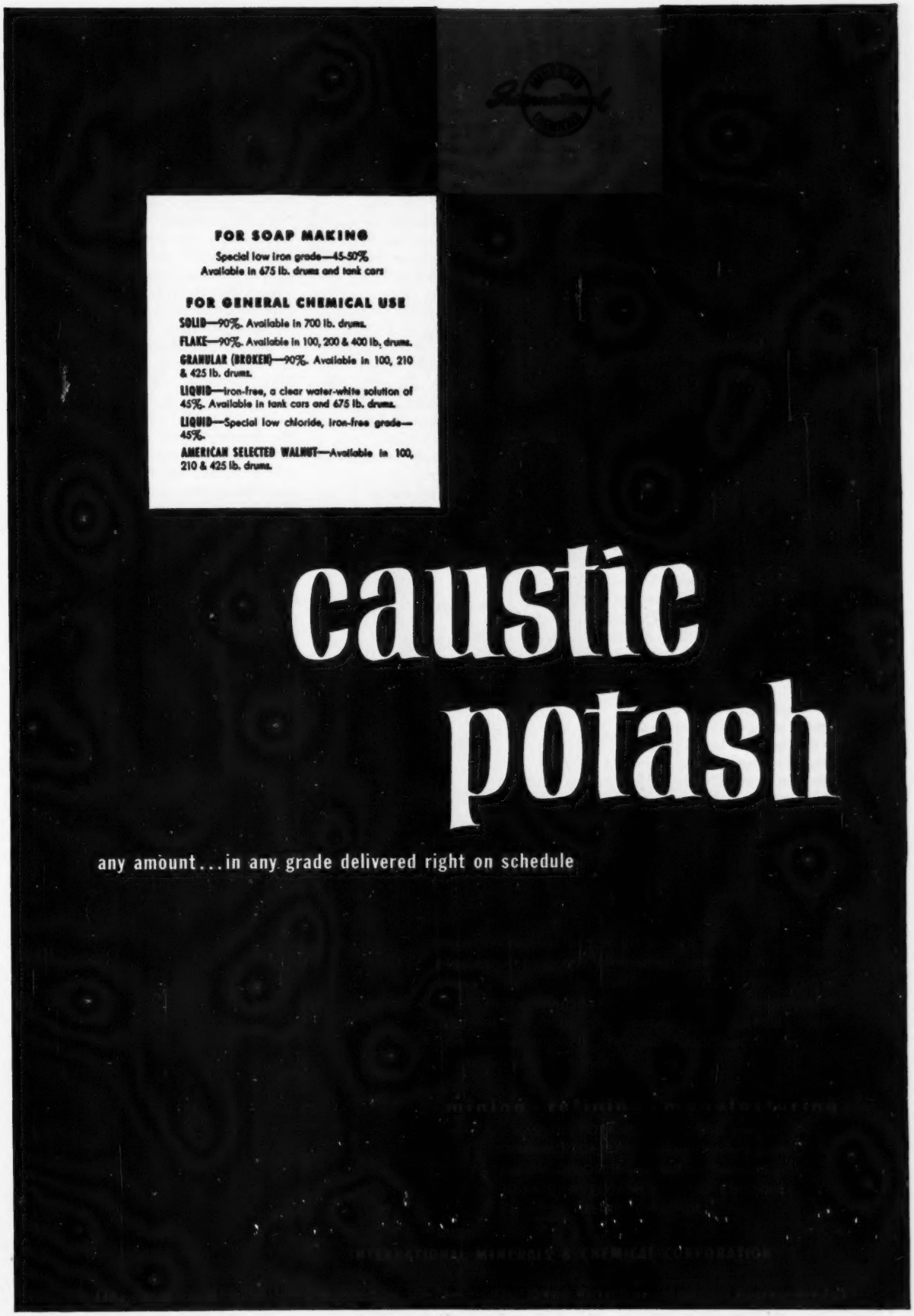
R. W. Hooker: Re-elected, president, The Chlorine Institute, Inc., New York, N.Y.

H. A. Swen: To vice-president and manager, Texas Gulf Sulphur Co., Newgulf, Tex.

Arthur Kelly: To vice-president, manufacturing, B. F. Goodrich Co., Akron, O.

Percy J. Ebbott: To a director, International Paper Co., New York, N.Y.

Robert H. Briggs: To manager, chemical sales division, Chas. Pfizer & Co., Inc., New York, N.Y.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Pay-Off in Good Will

The first seed of invention, nurtured to technical maturity by the Sinclair plan, was ripe for commercialization this week. It's a new cement-making process, invented by Stony Island, Ill., consultant Joshua Witt and perfected under the Sinclair Oil Corp. plan of making its Harvey (Ill.) laboratories available for the development of bright petrochemical ideas submitted by hopeful outsiders.

Witt's method (*CW Newsletter, Jan. 31*) combines many of the best features of the conventional wet and dry processes, is an outgrowth of the inventor's desire to get around some less appealing aspects of the former.

Cement manufacture by the wet process makes for more uniform kiln feed; reduces grinding, blending, pumping and storing problems. On the other hand, heat requirements (for evaporating slurry water) are high and slurries can't be allowed to stand for any length of time. If production must be stopped for some reason, equipment must be emptied to prevent the cement from setting up inside.

Witt put his finger on water as the cause of most wet-process drawbacks, set out to find another liquid in which cement could be ground. His requirements were clear-cut: The hypothetical grinding medium would have to remain liquid over a wide range of temperature, boil in the 300 F to 600 F range, have a low heat of vaporization and not deliquesce or react—even at high temperatures—with water or cement raw materials.

And last but not least, it should be readily available, reasonably priced.

Picking Up the Gauntlet: Witt had applied for a patent on his brainchild in 1948, submitted his idea to Sinclair three years later. Undaunted by Witt's bill of particulars, Sinclair researchers took up the challenge, tagged the cement venture "Project No. 2."*

Most non-aqueous liquids were quickly eliminated from the Sinclair study. The probe focused on high-boiling petroleum distillates and a naphtha was found that filled the bill. It is readily—and almost completely—recoverable from the slurry by distillation; and any residue remaining in the raw mix will burn in the kiln, add to heat input. Moreover, the naphtha—unlike water—can be used repeatedly with no take-up of undesirable material.

According to the inventor, the naphtha-based process does not call for new cement-making plants; it can be run in existing equipment. After decanting and distilling the naphtha from the slurry, the mix can be treated like a dry mix, burned in dry-process kilns. In a nutshell, cement-making attractions of the new process—as specified by Witt—are two-sided: Dry process plants can have control of product composition appoaching that of the wet; while wet plants gain a better fuel consumption-per-barrel of cement ratio, take on some of the dry-process economy appeal.

INVENTOR WITT: Without water, a cement-making hybrid.

Added feature: The hybrid process may also be used on clinker, permits blending of different types of finished cement.

As far as commercial advantage is concerned, the Sinclair plan hasn't turned up a Sinclair bonanza. True, there's a potential market for cement-making naphthas, but it's a market of which any naphtha maker could get a slice. The naphthas aren't patentable, so Sinclair couldn't gain by conditioning the process patent even if it owned it, which it doesn't.

Procedure used by Sinclair in dealing with inventors is, roughly, as follows: Proposals must be in a specified form, deal with petroleum products. Sinclair appraises the idea in the light of its potential value, scope of usefulness, time and facilities required (and available) for technical work. If the idea is accepted, a contract for the project is executed and a schedule of work drawn up.

Piracy Precluded: The inventor takes no part in the laboratory work, leaves it in the hands of the Sinclair staff. To preclude future charges of idea piracy, the company only considers proposals which are the subjects of patents or patent applications, owned by the proponent. And all patents arising from test work, similarly, belong to the individual on whose behalf the work was done. Sinclair, of course, gets a non-exclusive, royalty-free license. Thus far, no legal hassles have resulted.

From a public relations standpoint, the Sinclair plan is rated as very successful. The company reports that it is a distinct aid in attracting technical manpower, has sparked a good deal of general public interest. By coincidence, the plan has also proved to be a marketing boon; interested parties who ask about it at Sinclair service stations usually take "five gallons" in the process. Finally, the company feels that if good will means anything, the plan won't do it any harm when it goes to court in patent litigations.

No less concerned with the good will of its employees, Sinclair guarded against an impasse in intra-company relations by assuring its own researchers that the plan was, in no way, a reflection on their abilities as idea-producers.

Sinclair has received over 6,000 responses to its offer, more than a year and a half ago, of free technical development for promising petroleum ideas. By generous (in the estimate of a Sinclair spokesman) standards, 14 made sense; three were pursued in earnest.

There's still a steady flow of proposals, with the usual sprinkling of weird schemes, streaming into Sinclair Research Laboratories, Inc. (the Sinclair Oil subsidiary which runs the plan) New York headquarters. But it's noticeably less copious than it was a year ago. The lament of one Sinclair research executive: The independent inventor-type just isn't intrigued by petroleum products, "is more likely to come up with a better gear shift lever than a better lube oil."

Bio Trio

Three new pharmaceutical research developments spotlight progress in the quest for better sedative and pain-killing agents:

- A new class of hypnotic agents

* Projects Nos. 1 and 3 are still in the works.

People *will talk*

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which are reported to quickly produce sound sleep in laboratory animals has been discovered at Wyeth Institute of Applied Biochemistry (Philadelphia, Pa.). It comprises fluoroalkyl barbituric acids which, says the Institute's Richard de V. Huber, "are no more toxic than many of the hypnotic drugs now in medical use."

Although alkylbarbituric acids containing chlorine, bromine and iodine are known, fluorine-substituted members are nowhere to be found in the literature. Wyeth researchers made seven unsuccessful attempts before successfully synthesizing a member of the new series. Six different fluoroalkyl barbituric acids were prepared.

• Isoquinolines are a promising new group of local anethetics. Smith, Kline and French (Philadelphia, Pa.) researchers report several aminoalkoxyisoquinoline compounds which show marked local pain-killing activity. Activity was observed to be greatest when the isquinoline group is substituted in the 3-position by a butyl group and in the 1-position by a 3-(1-methylpiperidyloxy) group.

• Another interesting series of compounds with local anesthetic activity was recently prepared by staffers of the Swiss firm of Edward Geistlich (Lucerne). They're β-dialkyl aminobutyric anilides, show marked potency. In experimental animals *p*-ethoxy-β-diethylamino-n-propyl anilide was more active, half as toxic as procaine.

INDUSTRIAL COAL CONSUMER: For the big, a stake in germanium.

Profit in the Stacks

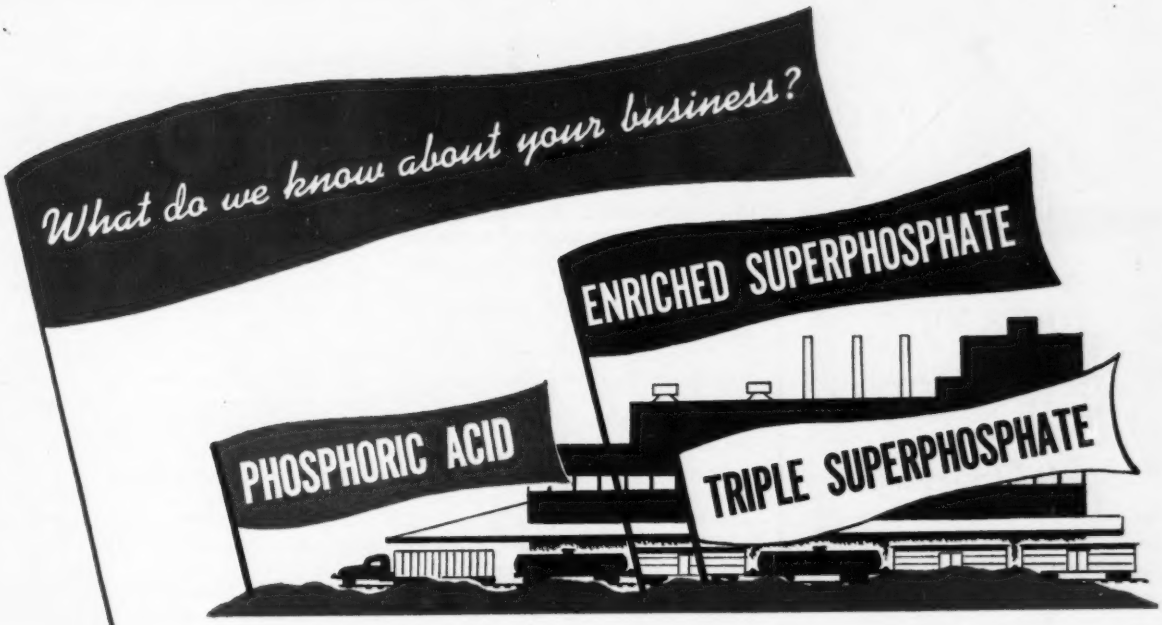
A germanium-hungry electronics industry, nursing a transistor tapeworm, is casting covetous eyes on the smokestacks of big coal-burning plants. Object of their glances: burnt ash, spotlighted in a new Bureau of Mines dictum as the likeliest commercial approach to the germanium in coal.

Germanium, currently produced as a by-product of zinc refining, sells for about $350/pound. But it takes 2½ million pounds of zinc ore to yield that pound of metal at Eagle-Picher Co.'s Henryetta, Okla., plant—chief source of the material.

Other companies are getting into production, but there's still a real danger that burgeoning transistor-sparked demand will soon outstrip supply. If market researchers are right, today's ouput—about 6,000 pounds/year—is less than 15% of estimated 1956 requirements.

Obviously, a richer source of germanium than zinc ore would be welcome. Coal might well be that source. American coals contain, on the average, 0.001% germanium, hardly an amount to conjure with. But the ratio shifts appreciably in the right direction where coal ash is concerned, gives a more favorable economic balance. That, in brief, is the idea underlying the Bureau's research (in cooperation with Signal Corps Engineering Laboratories) now getting under way in the Pittsburgh region.

But somber supply forecasts, and the spreading quest for new germanium sources and processes, could be



through Harte engineering know-how

The evident trend in fertilizers is toward more concentrated plant food. Phosphoric fertilizers are in an ever-increasing demand for use in higher analysis plant foods.

The Harte Company, one of the recognized leaders in fertilizer plant design and construction, is in a position of experience to engineer your phosphoric acid or triple superphosphate plants.

The Harte organization, though, offers more than experience. Harte-designed plants assure a minimum of capital investment, high operating efficiency, low operating cost. You will find, as others in the fertilizer industry have, that it will pay you high dividends to lay your problems before the Harte Company of engineering specialists. We can handle the complete job or any part—from site study, planning and architecture, to engineering, purchasing and construction management. Call us to discuss your high-analysis fertilizer plant plans. There is no obligation.

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knocked into a cocked hat by cheap transistor materials—now targets of research (*CW, Feb. 7, '53*) by chemical companies. With this hard reality lurking in the background, R. C. Corey—who heads the Bureau-Signal Corps project—is mapping a research campaign to exploit the germanium-from-coal angle.

Germanium is recoverable from coal ash and flue dusts as the oxide, which can be reduced under carefully controlled conditions to the elemental state.

Immediate objectives of the combined study are a standard method for measuring germanium content of coal ash and flue dust; and a thorough collection of ash samples from coal-burning utility plants in six states. Ultimate goal: an economically attractive, technically sound recovery process.

If the Bureau scores, it could mean a germanium-recovery plant for every big coal user. And "big" means just that; at current rates* small coal consumers would probably find recovery of the much-needed element too costly. From a technological point of view, however, germanium-from-coal ash is already an accomplished fact; in England, the element is recovered from the flue dusts of coal-fueled industrial plants.

Research Wrap Up

Here's a complete rundown of the highlights of Defense Department's recently unveiled (*CW Newsletter, Feb. 7, '53*) preliminary report on its 1952 industrial research mail survey. More than 2,000 firms, accounting for more than 85% of the nation's private research capacity, report:

- Total outlay for research and development in the U.S. last year was $3.5 billion; companies queried rolled up the healthy sum of $2 billion.
- Average cost of an industrial researcher was $22,100. The chemical industry's average of $16,500 was lowest; the automotive industry's $68,600, highest.
- Employed in research capacities —94,000 engineers and scientists (of all stripes), and about 140,000 administrative personnel.
- Draft calls, in case of full mobilization, would take about 23,500 scientifically trained research people.
- Turnover in engineering staffs is proceeding as rapidly as during World War II; call-ups for military service account for about one-fifth the turnover and outright losses.
- Almost half of the total volume of industrial research is financed by the federal government—mainly the Defense Department and Atomic Energy Commission.
- Industry still has a substantial measure of untaxed research capacity. Approximately 70% of firms replying to the survey are willing to take on more work, if the need arises.
- In 1951, the average research allotment of industrial companies amounted to 2% of the total value of sales and services. Individual cases, however, varied from a high of 13% in the aircraft industry to a low of 0.6% in petroleum refining.
- Aircraft, chemical and electrical industries spent 55% of the total research appropriation in 1951.

•

One of Six: National Gypsum Co. (Buffalo, N.Y.) is well on the way to bringing its far-flung research activities together under the same roof. And a brand-new roof it will be; the firm is just starting construction of a $1-million research center at Buffalo. Slated for completion by fall, the two-story building will centralize National Gypsum research—now carried on at six different plant laboratories—in 48,000 sq. ft. of working space. Blueprints provide for an adjacent twin structure if future needs warrant expansion.

•

Built for Shock: Durez Plastics & Chemicals, Inc. (North Tonawanda, N.Y.) is just out with Durez 16221 Natural, a new high-impact, glass-fiber filled phenolic molding compound. According to the company, the material was designed for applications which call for high shock resistance. And its mineral filler suits it for use at temperatures above the working range for cellulose-filled impact compounds. Durez also points up the material's good dimensional stability and high modulus of elasticity, believes its newest offering will "open up new fields of application which heretofore required the use of metals."

•

Canadian Debut: Monsanto Canada Ltd.'s new $400,000 research laboratories at Ville LaSalle were recently commissioned for service.

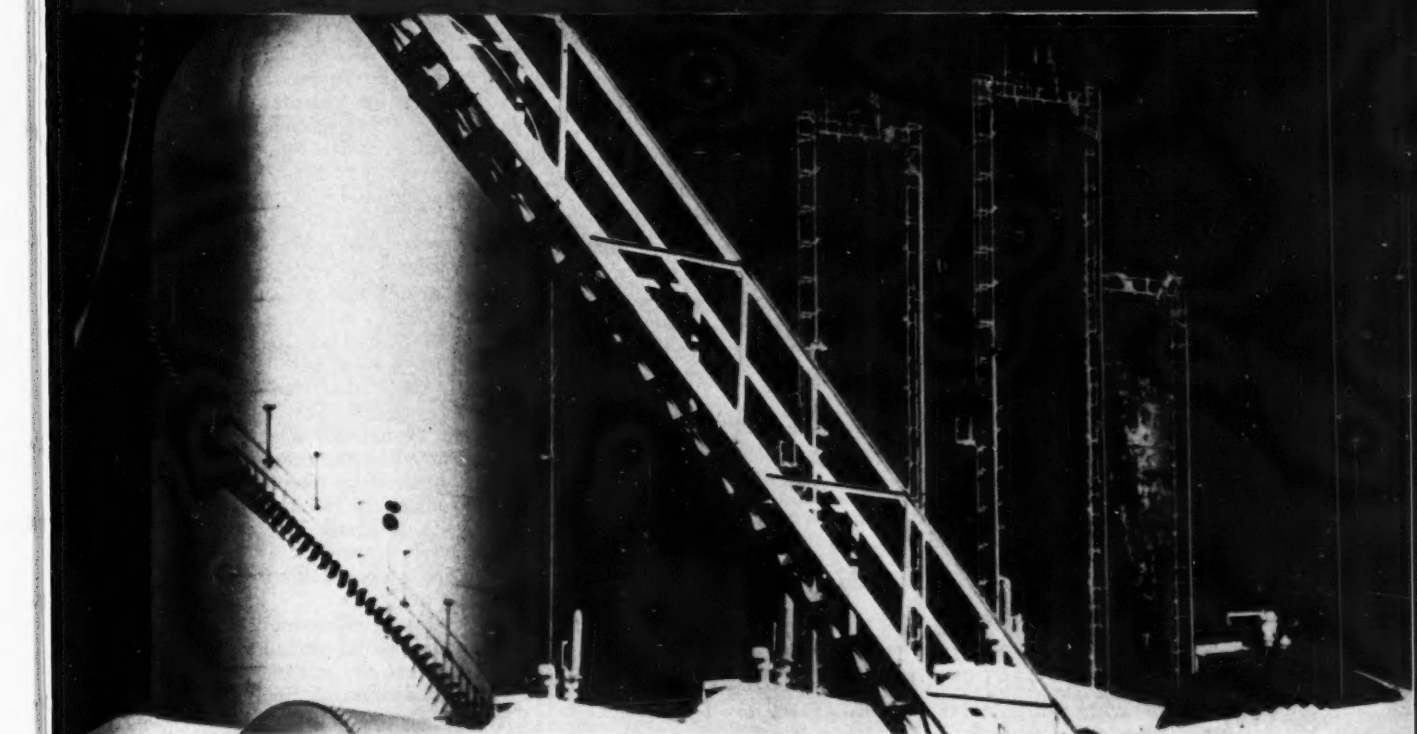
•

Law Suits Neutralized: Both research chemist Thomas J. McNaughtan and Durez Plastics & Chemicals, Inc., of North Tonawanda, N.Y., have withdrawn their civil suits against each other, Buffalo court records showed this week. McNaughtan had asked damages on grounds that his reputation had been injured by statements

* The germanium in a ton of coal would be worth $7.

IN THE CHEMICAL INDUSTRY

There's more to CORROSION than meets the eye



Sometimes VISIBLE...Often HIDDEN...Corrosion Strikes in Every Plant

This year, the Chemical Industry will pay millions of dollars for needless losses created by corrosion...*yet much of this corrosion may never be discovered* until it's too late to protect—and time to pay!

Corrosion is readily detected when it appears as rust layers or failing paint on exposed surfaces. But, by far, the major costs of corrosion come from hidden areas—where only minute inspections and constant care can prevent costly failures.

YOU LOSE IN A "WAITING GAME"

Don't wait for rust or other visible signs to appear. Visible or hidden, corrosion will destroy costly equipment... halt production... cause unnecessary maintenance shutdowns... and contaminate valuable products. Thus, corrosion dips deep into your profits as it creates needless losses totaling thousands of dollars.

YOU CAN PREVENT NEEDLESS WASTE

Check your plant for corrosion's presence. Double-check areas that may be vulnerable to *hidden corrosion*. If you would like help, an AMERCOAT Field Engineer will gladly assist you in making a thorough analysis. There is no obligation.

What is AMERCOAT?

AMERCOAT is a method of corrosion control. Not just a single product, but a complete LINE of coatings, individually formulated to solve or control specific industrial corrosion problems.

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RESEARCH . . . . . .

made by his former boss at Durez (*CW, Jan. 17*); the company sued McNaughtan for alleged breach of contract. McNaughtan is now working for Borden's Durite Division in Philadelphia, although a clause in his old contract with Durez reportedly specified that he would not take a job as a chemist with a competing company within a certain time after leaving Durez.

•

Edisonia: Five pounds of goldenrod rubber made by Thomas Edison during his quest for a plentiful domestic rubber-source was recently presented to the Ford Foundation by Robert H. Halgrim—curator of the Edison home and laboratory and a former associate of the inventor. The memento will become a part of the Foundation's traveling exhibition of objects from the Henry Ford Museum.

•

Two to Go: India's new national electrochemical research institute at Karaikudi (near Madras) has just been formally unveiled. The ninth in a series of 11 national scientific institutes planned for the country, the organization is set up for pilot-plant as well as laboratory investigations. According to Institute director B. B. Dey, the new research arm's program will reflect "a special industrial bias."

•

Popular Quartet: Laboratory samples of four unsaturated alcohols are now available from the research and development division of Reilly Tar & Chemical Corp. (Indianapolis, Ind.). They are: methyl butynol; methyl pentynol; dimethyl hexynol; and dimethyl octynediol. Applications are foreseen by Reilly in the preparation of pharmaceuticals, polymers, insecticides and fungicides. The company, like Air Reduction Chemical Co. (*CW, July 12, '52*), makes the compounds from acetylene, is prepared to offer them on a commercial scale.

•

Liberated: Atomic Energy Commission has just released 23 patents for non-exclusive, royalty-free licensing. Included in the newly liberated group are four chemical patents: 2,622,008, production of radioactive carbon dioxide; 2,622,014, method for preparing boron trifluoride; 2,626,203, method of making zirconium tetrachloride; 2,626,254, method of polymerizing trifluorochloroethylene. Commission-held patents and patent applications released for licensing now total 530.

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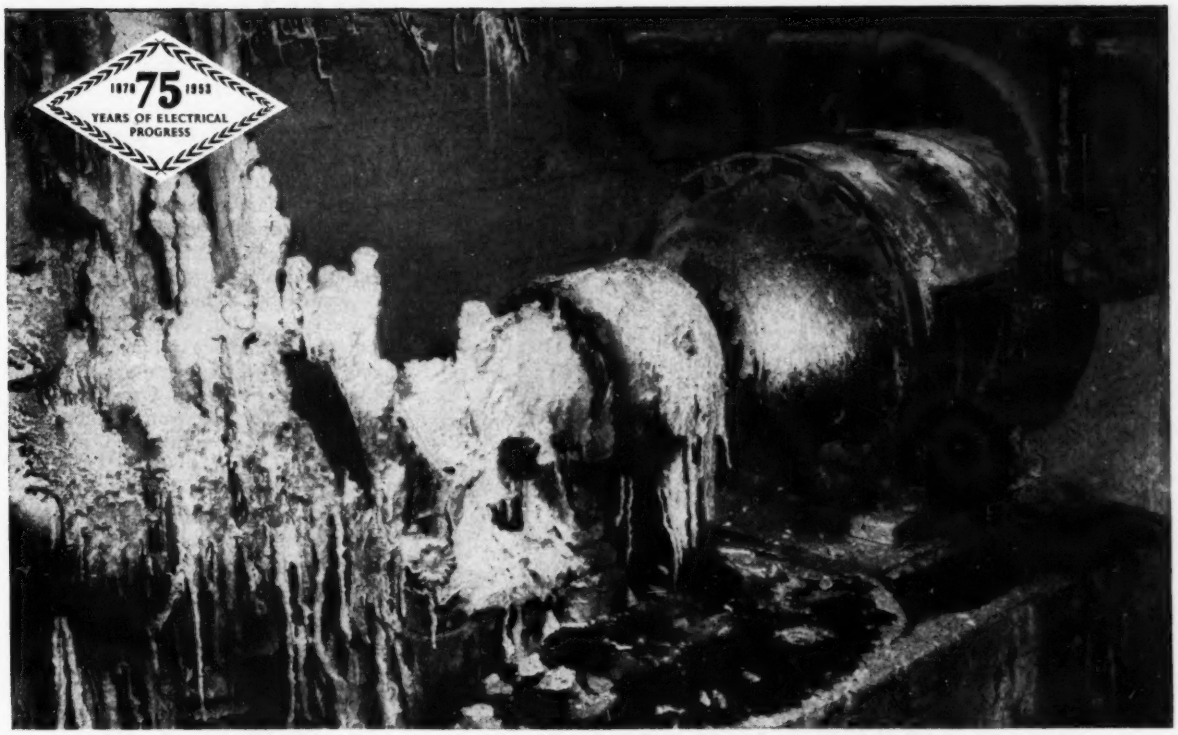
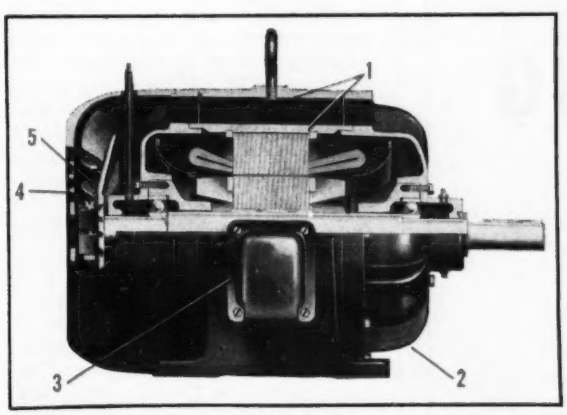
Clear Target: What Abbott Laboratories calls "the first antibiotic aimed



TOUGH CHEMICAL-PLANT JOBS in corrosive atmospheres prove the superiority of standard "off-the-shelf" Tri-Clad motors. This totally enclosed fan-cooled Tri-Clad motor runs 12 hours a day, 6 days a week, driving a flash cooler pump.

Cast-iron construction protects this true chemical motor against corrosion



CORROSION PROTECTION is assured by, 1) Cast-iron frames, 2) Reinforced cast-iron end shield, 3) Cast-iron sealed conduit box. 4) Cast-iron fan grill, 5) Non-sparking, non-corrosive fan.

G-E standard Tri-Clad* TEFC motor needs no special paints or other "extras"

Designed as a chemical motor, sold as a standard motor, the G-E Tri-Clad totally enclosed fan-cooled motor of cast-iron construction is still superior to "specials."

Heavy-duty cast-iron is corrosion resistant, needs no additional paints, or other "extras." Nor is it subject to corrosive attacks from nicks in the coatings.

Long-lasting cast-iron is not subject to pitting which causes structural weakness. External hardware and fittings are also corrosion resistant.

For more data, ask your G-E Apparatus Sales representative or write for Bulletin GEA-4400 to General Electric Co., Section 662-41, Schenectady 5, N. Y.

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specifically at treatment of one disease" was brought out last week by the North Chicago, Ill., pharmaceutical manufacturer. It's fumagillin, goes by the trade name, Fumidil. Abbott says the commercial fledgling "is inactive against the bacteria, fungi and viruses normally in the intestinal tract —attacks only the ameba which causes intestinal amebiasis."

Fumagillin, which has been eyed by several antibiotics-producing firms, is a crystalline material produced during the growth of a strain of the mold *Aspergillus fumigatus*. Chemically, the antibiotic has the empirical formula $C_{27}H_{36}O_7$, is a weak acid of high molecular weight (472).

•

Tagged Pair: DL-epinephrine-*d*-bitartrate and alloxan-2 are the newest additions to Tarcerlab, Inc.'s (Boston, Mass.)) roster of isotope-labeled compounds. Both are tagged with carbon-14. The former is available now; the latter will be ready by March 1.

•

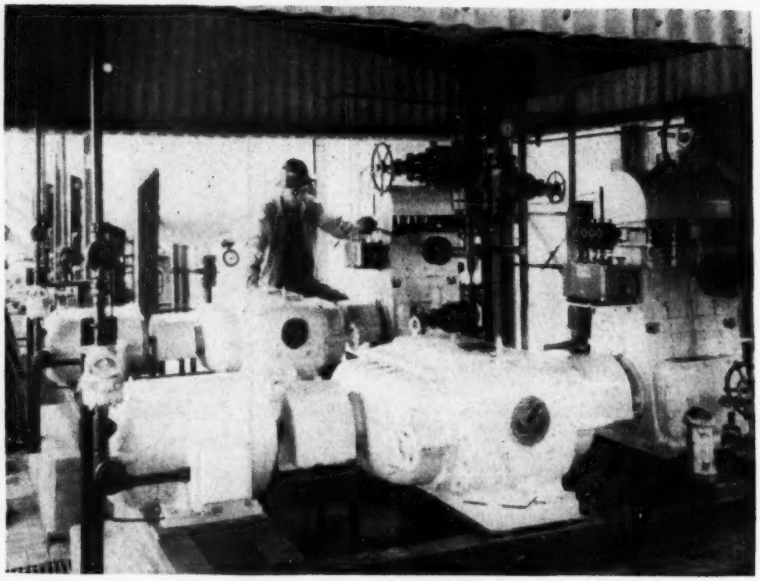
Pollution Aid: A new technique for the determination of hydrocarbon gases in the atmosphere was recently reported by researchers of Esso Research Center. Here's how it works: Atmospheric samples are brought into contact with silica gel at minus 100 F. Hydrocarbon gases are adsorbed by the silica gel, subsequently transferred to an evacuated stainless steel bomb. Gaseous contents of the bomb are determined by mass spectrography.

Efficiency of the new method was tested with the aid of synthetic smog (containing 0.1% hydrocarbons, carbon monoxide, nitrogen and sulfur compounds) prepared in the Esso laboratories. Results were good. In addition to hydrocarbons, the bomb technique can be applied to the determination of sulfur chemicals and carbon monoxide, but at a significant loss of accuracy.

•

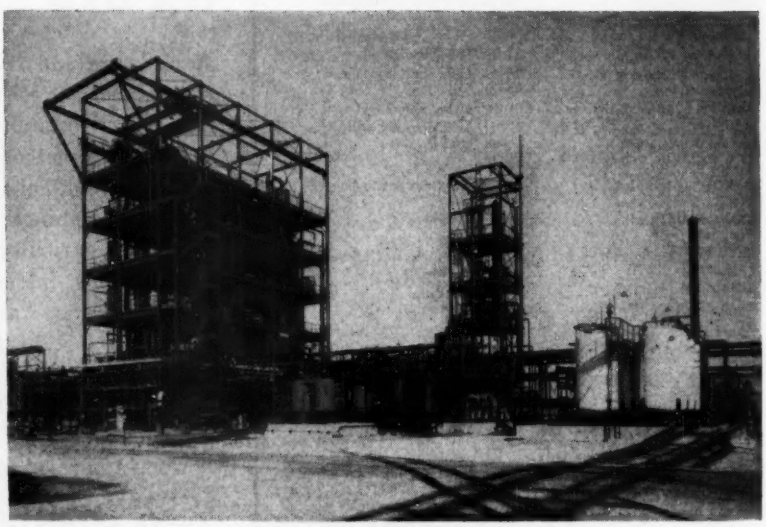
Purity for Sale: Capitalizing on the isomer-separating process which it uses to produce pure *o*-dichlorobenzene, Solvay Process Division (Allied Chemical & Dye Corp.) is now piloting three new, high-purity chlorinated benzenes. They're 1,2,3-trichlorobenzene, 1,2,4-trichlorobenzene and 1,3,5-trichlorobenzene, are available in experimental quantities at a purity of 99% or better. Solvay thinks that each of its new offerings should provide "an interesting starting point for the synthesis of weed killers and other plant hormones." Other application possibilities: as solvents in dye synthesis; in bactericidal soaps and solutions.

PRODUCTION. . . .



THIS IS THE NICKEL CARBONYL unit. The remaining 40-20% of the carbonyl available for reaction is supplied by nickel carbonyl.

New Plant, New



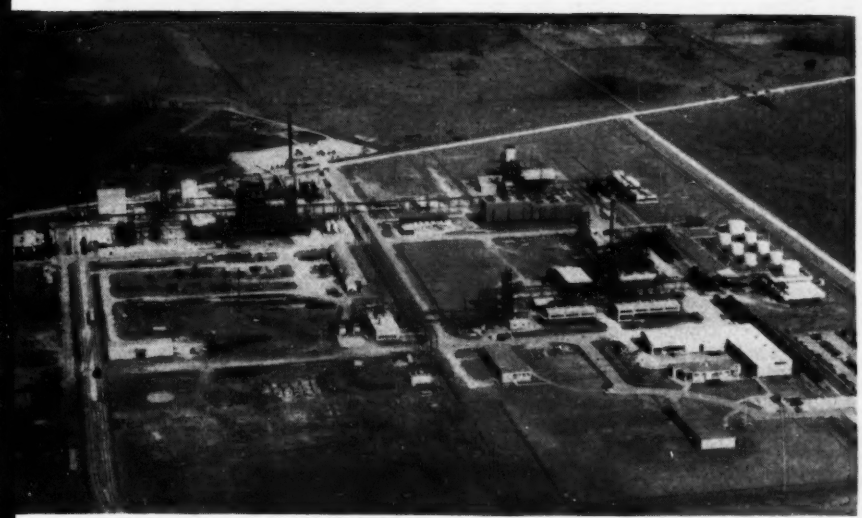
FINALLY, ACRYLATES ARE SYNTHESIZED, purified. Yields from the process run 80-90% based on acetylene and carbon monoxide.

Building an $8 million plant based on a new process without first building and operating a pilot plant can be risky business. But it's paying off for Rohm & Haas, which has done just that at its newly-opened (*CW, Jan. 31*) unit for making acrylate monomers at its Deer Park (Tex.) plant. The proof of the method: It has chopped the tankcar price of ethyl acrylate monomer from 48¢ to 42¢ a lb., methyl acrylate from 49¢ to 42¢ a lb.

The new plant, new process and new price are another step forward for Rohm & Haas in its continuing drive to bring the price of the acrylates

NATURAL GAS IS OXIDIZED to carbon monoxide. This provides 60-80% of the total carbonyl available for the reaction to the acrylate.

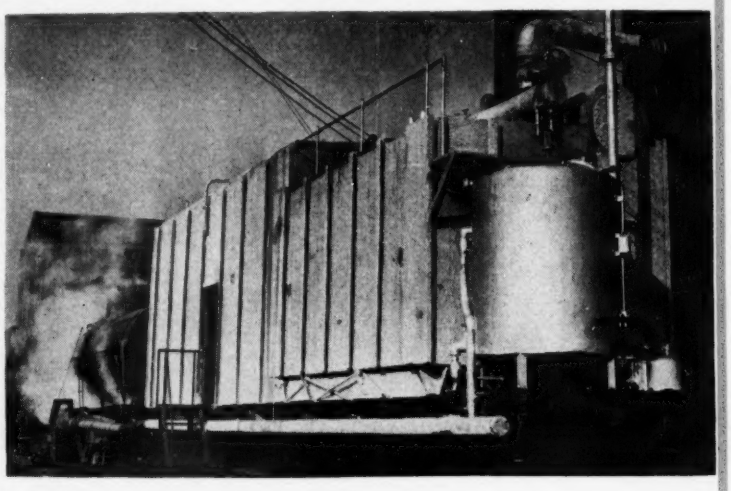
Process, New Price



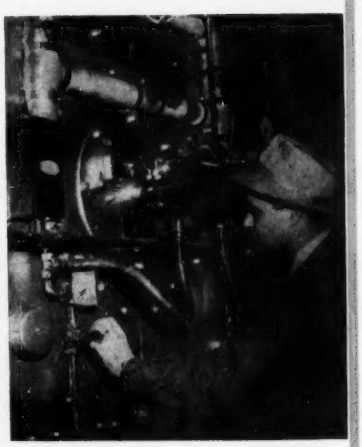
AERIAL SHOT shows Rohm & Haas' Deer Park plant near Houston. The $8 million acrylate unit is the latest addition to the plant.

down to a point where they'll be able to compete handily with other monomers. And the big jump from the lab to a commercial unit isn't so dangerous as it sounds, for the design was based on operating data taken from a laboratory "bench pilot plant" which the firm operated round-the-clock for an extended period.

Moreover, the theory behind the process is firmly grounded in the work of Germany's distinguished acetylene chemist, Walter Reppe, as well as the later investigations of Rohm & Haas researchers. Reppe found that acetylene, carbon monoxide and an alcohol



Mobile Power Plant



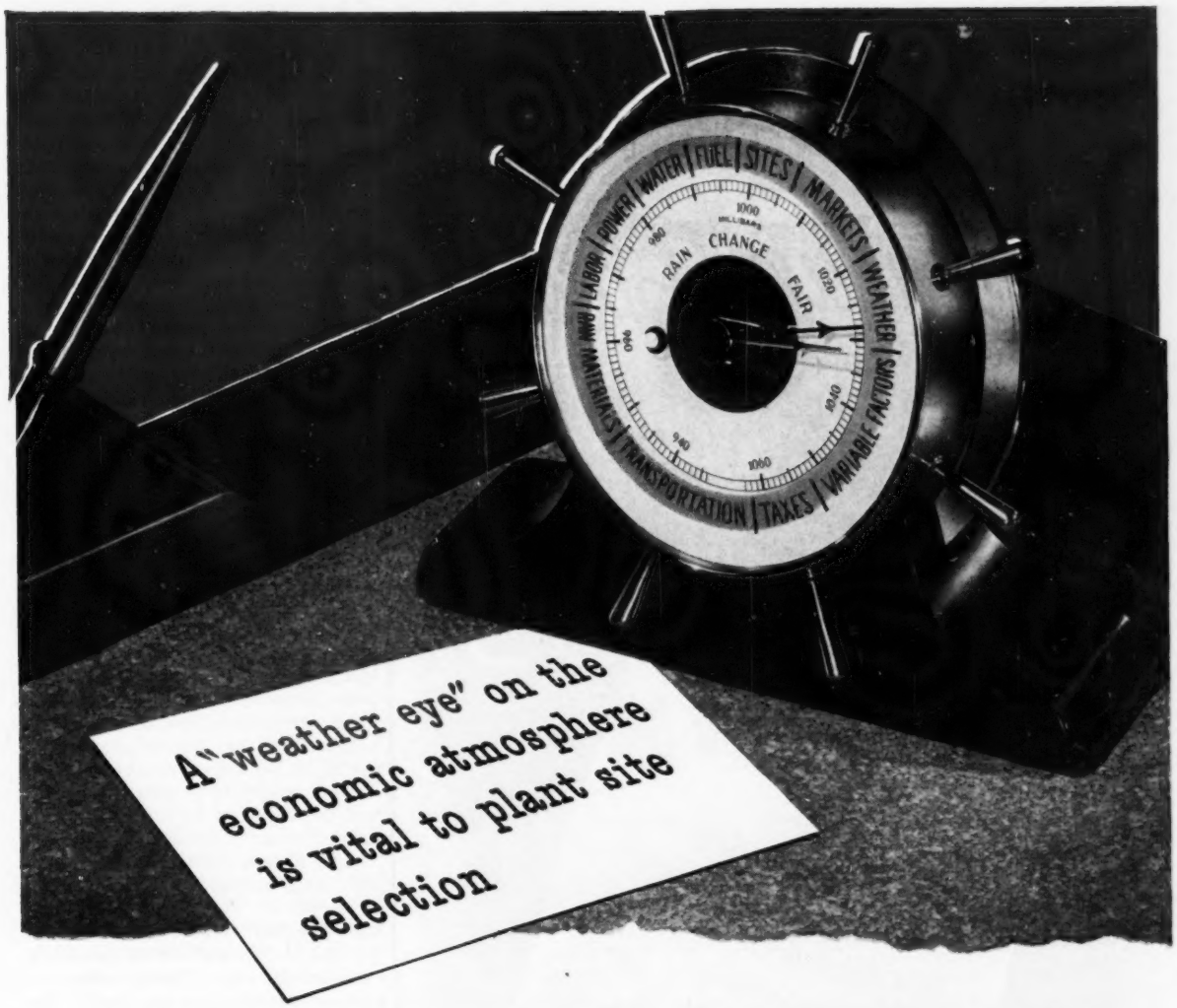
A POWER PLANT on a railroad flat car is Publicker Industries' (Phila.) happy answer to a thorny problem of needing a boiler at different locations. It's currently being billed as the only mobile plant of its type ever constructed. Picture (*above*) shows the exterior of the boiler, while L. S. Shprintz (*right*), engineer in charge who supervised its construction, checks the oil drain valves. The new installation is currently being used to clean tanks, operate steam pumps and supply heat. Only outside electrical, water, oil and drain connections have to be changed when the power plant is moved. It can be operated by one engineer and can move over any railroad.

would react to form esters of acrylic acid. They could be obtained either by a stoichiometric process under mild conditions or a catalytic process carried out at high temperature and pressure.

Drawbacks on Both: In the stoichiometric process, acetylene, alcohol, nickel carbonyl and an acid react at atmospheric pressures and 40 C. to give approximately 60% yields of the acrylate. The trouble is that side reactions take place and a relatively large amount (up to 15%) of the product can be the propionate. The close boiling points (less than one degree difference, for example, between ethyl propionate and ethyl acrylate) makes separation difficult.

Further investigation by Reppe revealed the fact that at elevated temperatures (150-180 C.) and pressure (about 30 atmospheres) acetylene, carbon monoxide and an alcohol would form the acrylate in the presence of a catalyst like nickel bromide. But there are several disadvantages to this reaction: It's slow, and the nickel carbonyl which is formed is swept out of the reaction mixture, also decomposes rapidly under the temperatures employed. That means depletion of the catalyst. Further, at the high temperatures that are required, the acrylate's tendency to polymerize increases, the use of low-boiling alcohols is impractical, and the product—though it contains little propionate—is contaminated with organic halogens. And at the high pressures, acetylene forms tars which foul up the catalyst.

Rohm & Haas' process (U.S.P. 2,582,911) sidesteps drawbacks of both by combining them. The stoichiometric



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PRODUCTION . . . . .

reaction is started, then carbon monoxide is introduced. Under mild conditions, it combines with the acetylene and alcohol to form the acrylate.

Setting the Sights: The new unit in Texas will turn out methyl and ethyl acrylate monomers principally, but can be used to make the higher acrylates, too. Rohm & Haas points out that it has been producing several million lbs. of acrylates a year. But with the price pared, it is now setting its sights on a bigger share of the monomer market.

In the past, the biggest uses for acrylates have been in rigid plastics and in leather and textile finishes. One field that looks promising is the use of acrylates in copolymers. They can, for example, be used with vinyl chloride to form "internally" plasticized copolymers. That means lower amounts of external plasticizers; in some cases, none at all.

But the field that looks particularly bright is protective coatings. Although acrylic polymers in this field have been well known for many years, they have been generally considered as high-priced specialties. Now Rohm & Haas is introducing an acrylic product for use in high-quality water-base paints. A 100% acrylic dispersion in water, it will be marketed by the firm's Resinous Products Division.

A significant sidelight in connection with the new plant is the production of acetylene. It's presently coming from calcium carbide because, says the firm, the scale of operations—while considerably larger than previous acrylate capacity—does not justify the installation of facilities to make acetylene from natural gas. As soon as the volume warrants it, Rohm & Haas will undoubtedly switch to natural gas.

EQUIPMENT . . . .

Sequence Camera: The high speed of movies and the large size of stills are cited for the Hulcher "70" sequence camera manufactured by Charles A. Hulcher Co., Inc. (Hampton, Va.). The camera uses 70 mm. film, takes pictures at the rate of 25 five-inch frames per second or 50 two-and-a-half-inch frames per second.

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Expansion: Oliver United Filters Inc. (New York, Chicago, and Oakland, Calif.) has arranged for sales and engineering representation in Southern California, Arizona, Nevada and New Mexico through its new Los Angeles office.

•

More Expansion: Engineering Corp. of America (Westfield, N.J.) just closed a deal for acquisition of additional

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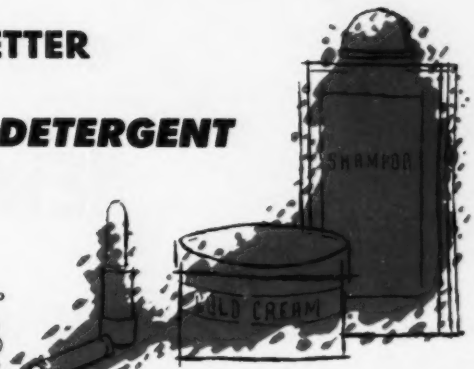

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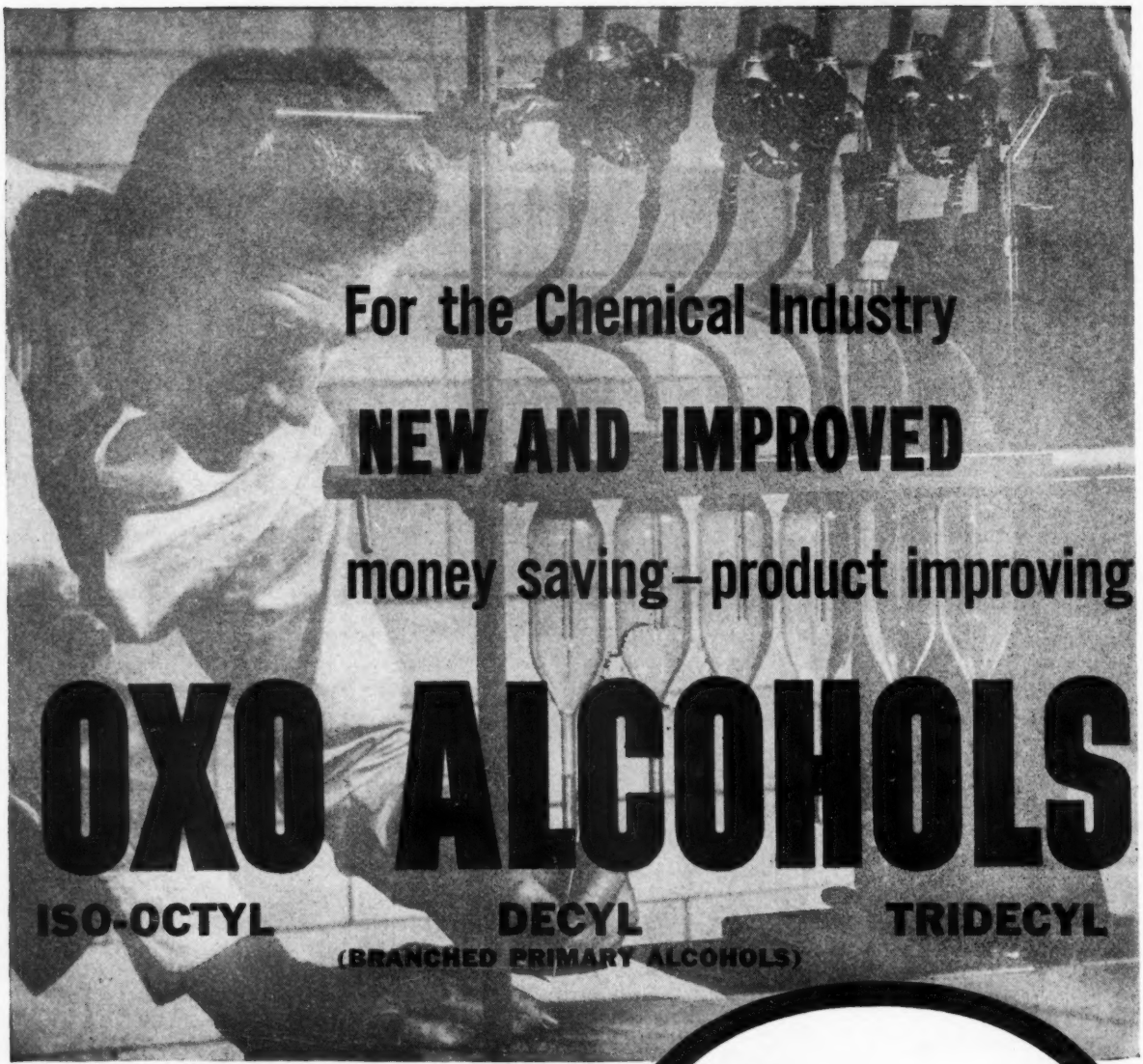

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Acetone
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PETROHOL 99
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Decyl Alcohol
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PRODUCTION . . . . .

plant fabricating facilities at Garwood, N.J.

•

Representation: General Combustion Co. (Birmingham, Ala.) was recently signed as Eclipse Fuel Engineering Co.'s (Rockford, Ill.) district representative in Alabama and Northwestern Florida.

•

Temperature Testing: A standard line of testing equipment, now being marketed by Tenney Engineering, Inc. (Newark, N.J.), is designed to meet most temperature testing needs.

•

Seals: Gas-O-Seal, developed by Franklin C. Wolfe Co. (Culver City, Calif.), is a new device for sealing flange fitting, hatch covers, access doors and hand-hole covers.

•

Shaft Seal: Chicago's Crane Packing Co. has just come out with a new mechanical seal, John Crane Type 19, for use in small pumps, hot water circulators and other rotary shaft applications with diameters of ¼, ⅜, ½, ⅝ and ¾ in.

•

Screw-Seal: Available in 3-ft lengths, this new industrial clay pipe features Plastisol cast-on threads which are screwed into phenolic collars to form tight seals. Sold by the Robinson Clay Product Co. (Akron, Ohio), it comes in 4-, 6- and 8-in. diameters.

•

And Ceilings: From the Kaylo Division (Owens-Illinois Glass Co., Toledo, Ohio), comes news of a name change: from Kaylo Insulating Roof Tile to Kaylo Roof Deck.

•

Galoshes: Tingley Rubber Corp. (Rahway, N.J.) has added a new neoprene industrial overshoe to its line of footwear for those who work around chemicals damaging to ordinary rubbers. Due to the absence of a fabric lining, the rubbers' three sizes (small, medium and large) will fit practically all sizes of shoes.

•

Portable Potentiometer: Manufactured by the Foxboro Co. (Foxboro, Mass.), the potentiometer weighs 14 pounds and is said to have an accuracy of 0.25%.

•

Density Control: The Precision Thermometer & Instrument Co. (Philadelphia) has just developed an instrument for continuously indicating, recording and/or controlling the density of flowing liquids. Different models of Princo Densitrol are available in varying degrees of complexity.

For over 25 years, Rohm & Haas has used Glycerine in the manufacture of its famous "Amberol F-7." This versatile modified-phenolic resin is used in floor varnishes, quick-drying enamels for home decorating and furniture refinishing, porch and deck paint, and marine finishes.

In the manufacture of Rohm & Haas' "Amberol F-7," a phenolic condensate reacts with Glycerine and rosin to yield a chemically and physically homogeneous, high molecular weight compound. Without this chemical combination with Glycerine and rosin, the phenolic condensate would be insoluble and could not be used in drying oils. Just one more example of the vital part Glycerine plays in the protective coatings industry.

In alkyd resin manufacture, too, America's leading paint manufacturers turn to Glycerine. They prefer its better cooking qualities. They know that Glycerine permits easy control of the manufacturing process to give a product of low acid number, without undue hazard of gelation.

If you'd like detailed information on Glycerine's chemical and physical properties write for your copy of "Why Glycerine for Alkyd Resins and Ester Gums?"—Glycerine Producers' Association, 295 Madison Avenue, New York 17, N. Y.

Nothing takes the place of Glycerine

Pharmaceuticals in India

India's growing independence from Great Britain and the coincident freeing of its foreign trade from sterling-block influences—has had its effect on the country's import-export relationships with the U.S. The "dollar area's" share of India's total exports, for instance, has increased from 7% pre-war to a recent high of 24%. Nearly half of the chemicals going to that Asiatic country are, however, in the "medicinal and pharmaceutical preparations" classification; and the luster of this market will be dimmed in direct proportion to the success with which India accomplishes its aim of self-sufficiency on such products. Here, in a special report from its Bombay representative, CW brings these developments up to date:

The rapid progress made by the Indian pharmaceutical industry in recent years, particularly after the last war, has resulted in the country's achieving self-sufficiency in respect to some drugs—while many others are produced in fairly good quantities. The value of India-produced medicinals now exceeds 50 million rupees (about $10 million) per year.

Vaccines, serums, and antitoxins are manufactured both by the government and by private firms. Based on production capacity, the government's share of the total is over 60%. Not only is self-sufficiency claimed, but also a margin for limited exports.

The annual capacity for adrenaline products is 84 million cc., and that for pituitary extracts, 50 million cc. Insulin has been produced experimentally by some firms, but its manufacture has not been taken up on a commercial scale because of difficulties in the collection, storage, and transport of pancreases from slaughter houses.

The refining of shark liver oil, a recent development, provides a good, cheap substitute for cod liver oil. Sharks abound in Indian waters and the oil is turned out by the Government Fisheries Department as well as by private firms. With a production capacity of 550 billion international units per year, the country is in a position to export some of the oil to the United Kingdom and Australia.

Liver extracts, too, were not manufactured in India before the war. But at present, there are about 20 firms making these extracts—creating a domestic capacity of 1.4 million lbs. for oral use and 23.8 million cc. for injections.

Capacity is also being built for adequate quantities of inorganic medical chemicals, including magnesium sulphate, magnesium carbonate, magnesium oxide, phosphoric acid, ammonium chloride, potassium bromide, potassium permanganate, potassium bicarbonate, sodium potassium acetate, and the potassium, sodium and iron citrates.

The fermentation industry, on the other hand, has made slower progress. Manufacturers say that this is due to variable state excise regulations, high transport charges, and the lack of adequate supplies of raw materials. Only ethyl alcohol and calcium lactate are produced in large quantities. The production of malt extract is on a rather small scale and insufficient to meet the local demand. Some firms are understood to be conducting research work on the manufacture of acetic acid and citric acid.

Other chemotherapeutic drugs such as the sulfas, synthetic antimalarials, analgesics, sedatives, hypnotics, and anesthetics are produced on a small or experimental scale at present.

India does not produce antibiotics at the moment, but a large penicillin plant near Poona will go into production this summer. The new installation—capacity of 40,000 vials a day—is the result of collaboration between the government of India and various United Nations organizations. Meanwhile, a private firm in Calcutta is continuing with its penicillin pilot-plant experiments.

To a country that is industrially pulling itself up by its bootstraps, this over-all progress is a source of great satisfaction. But India is fully aware that it still has a long way to go.

No Trade Secrets

Most annual sales meetings are an object lesson in the "closed door" technique. Salesmen are gathered together behind locked doors for a searching analysis of past failures and a careful briefing on the secret strategic moves planned for the upcoming year. But last week there was an exception to the norm; F. C. Huyck & Sons (Rensselaer, N. Y.) not only opened up its meeting, but also invited in—of all people—the sales experts of other companies.

Occasion for this departure was the "Sales Management Symposium" which Huyck (one of the nation's largest makers of papermaker's felts) instituted for its sales force. The panel guests included Milton Bixby, Hercules Powder's director of sales; Prosper Neuman, Hercules' technical service manager; and Fred Soderberg, manager of General Dyestuff's industrial division.

Said Huyck's president, Grenville Holden: "I know no better way of bringing to our own organization the best in sales management 'know-how' than to bring to our annual meeting sales managers of companies that have shown outstanding performance over the years."

•

Bulletins and Books: Here are some recent additions to the trade literature:

• The Office of International Trade, U.S. Department of Commerce, has issued its latest edition of the "Foreign Commerce Yearbook." A 723-page volume, it covers the year 1950, latest period for which complete statistics are available. The price: $2.25.

• Hooker Electrochemical has prepared its "Bulletin No. 30," a chart-filled pamphlet on Fluorolubes, Hooker's series of chlorotrifluoroethylene polymers.

• "Hyfacs" is the name of a pamphlet available from Emery Industries, Inc. (Cincinnati, Ohio). It discusses Emery's hydrogenated castor oil (Hyfac 2142) and 12-hydroxystearic acid (Hyfac 442).

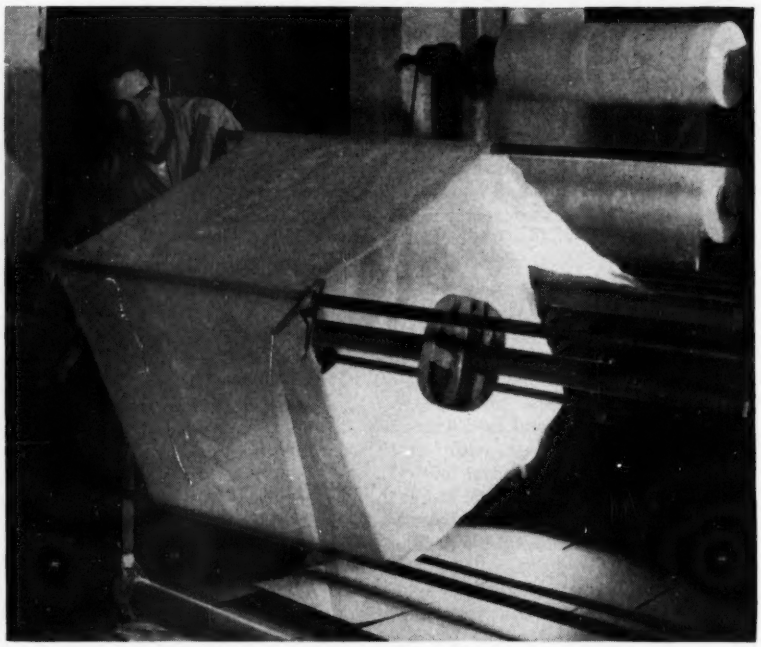
• The 1953 edition of the "Directory of Central Atlantic States Manufacturers" has been published by the T. K. Sanderson Organization (Baltimore, Md.) The 520-page book covers all manufacturing firms in Maryland, Delaware, Virginia, West Virginia, and the District of Columbia.

•

Multiwalls: The Fulton Bag and Cotton Mills (Atlanta, Ga.) is expanding its Multiwall Paper Bag Division with the construction of a new plant at St. Louis. The addition is part of Fulton's ambitious plans for 1953 which also includes a new bleachery at Atlanta and a new textile plant at New Orleans.

•

Cans and Bags: The Continental Can Co. has acquired the assets and business ($13 million a year) of the Benjamin C. Betner Co. (Devon, Pa.), maker of medium and small-sized bags, with plants at Devon; Richmond, Va.; Paris, Tex.; Beaumont, Tex.; and Los Angeles. Continental is setting up the acquisition as a separate division, even though it will act as a supplement to the company's Fibre Drum and Paper Container Divisions.



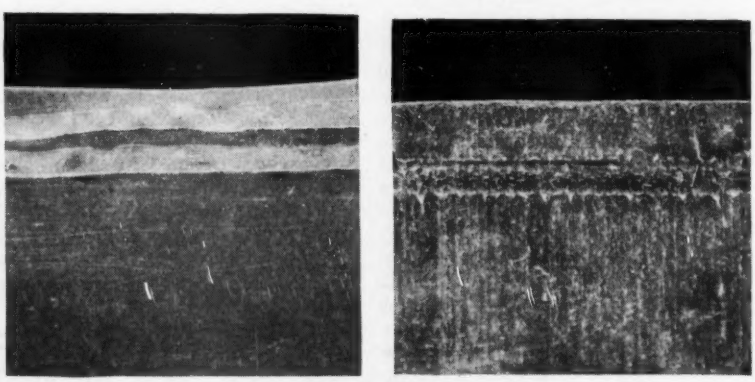
1 POLYETHYLENE SHEETING, extruded into a long, seamless "tube," is wrapped around a revolving frame. Each turn represents two drum-liner lengths.

With a Double Seal . . .

CONTRARY to current pseudo-liberal thinking, big developments by big companies do not stifle the initiative of "small business." A case in point is the bevy of small operators who have cashed in on the development of polyethylene drum liners. And this week, one of those companies, Protective Lining Corp., has come up with what it claims to be a "major improvement" in liner manufacture.

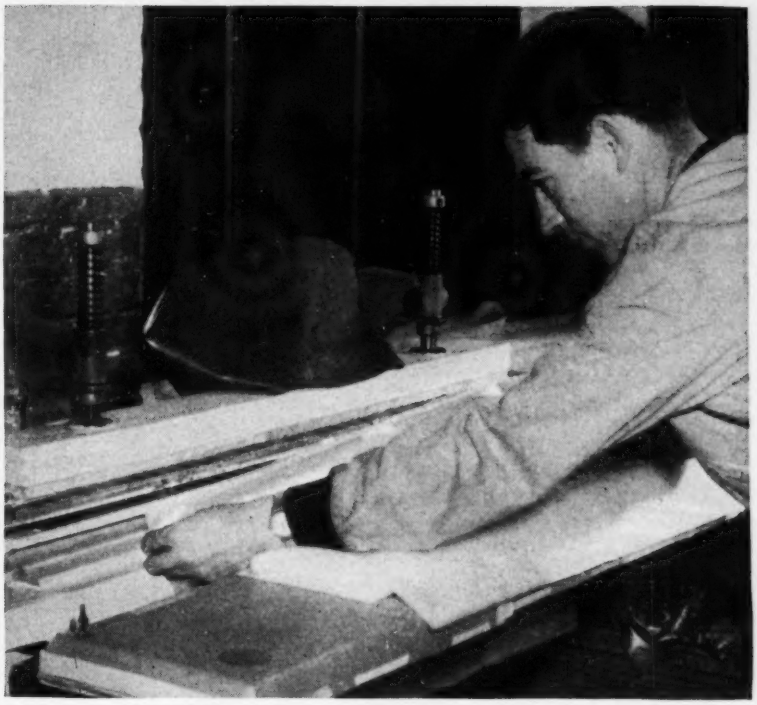
Now situated at new quarters deep in the Greenwich Village section of Manhattan, Protective Lining has been making steady progress since it was formed three years ago. Under president Jerry Dorfman, plastics teacher at the Whitman School of Interior Decoration, the firm has built up sales amounting to a ¼-million lbs. of polyethylene a year. But, says Dorfman, "this is just the beginning." Basis for his optimism: a new low price schedule and a new method of heat-sealing the plastic sheeting.

Variations in sealing technique are as myriad as the operators who have tried their hand at it. In spite of repeated experiments, electronic sealing of polyethylene has met with little success. Most experimenters returned to the straight heat-and-pressure meth-



CLOSE-UPS of the "Twin-Sure" seal *(left)* and the usual type of single-line heat seal *(right)* indicates the basic differences between the two methods.

2 CUTTING the tubing in a precisely straight line is made easy by slot in the bar.



3 SEALING THE BOTTOM completes fabrication of the polyethylene liner. Here a Protective Lining Corp. operator applies the company's new "Twin-Sure" seal.

To Be Sure

od, but this has its own troublesome problems:

- Excess heat or pressure extrudes the film, reducing its thickness, in some cases, to one half. This seriously weakens the critical "leading edge" of the seal.
- Too little heat or pressure results in a "leaky" seal—not easily detected unless the liner is destructively tested.

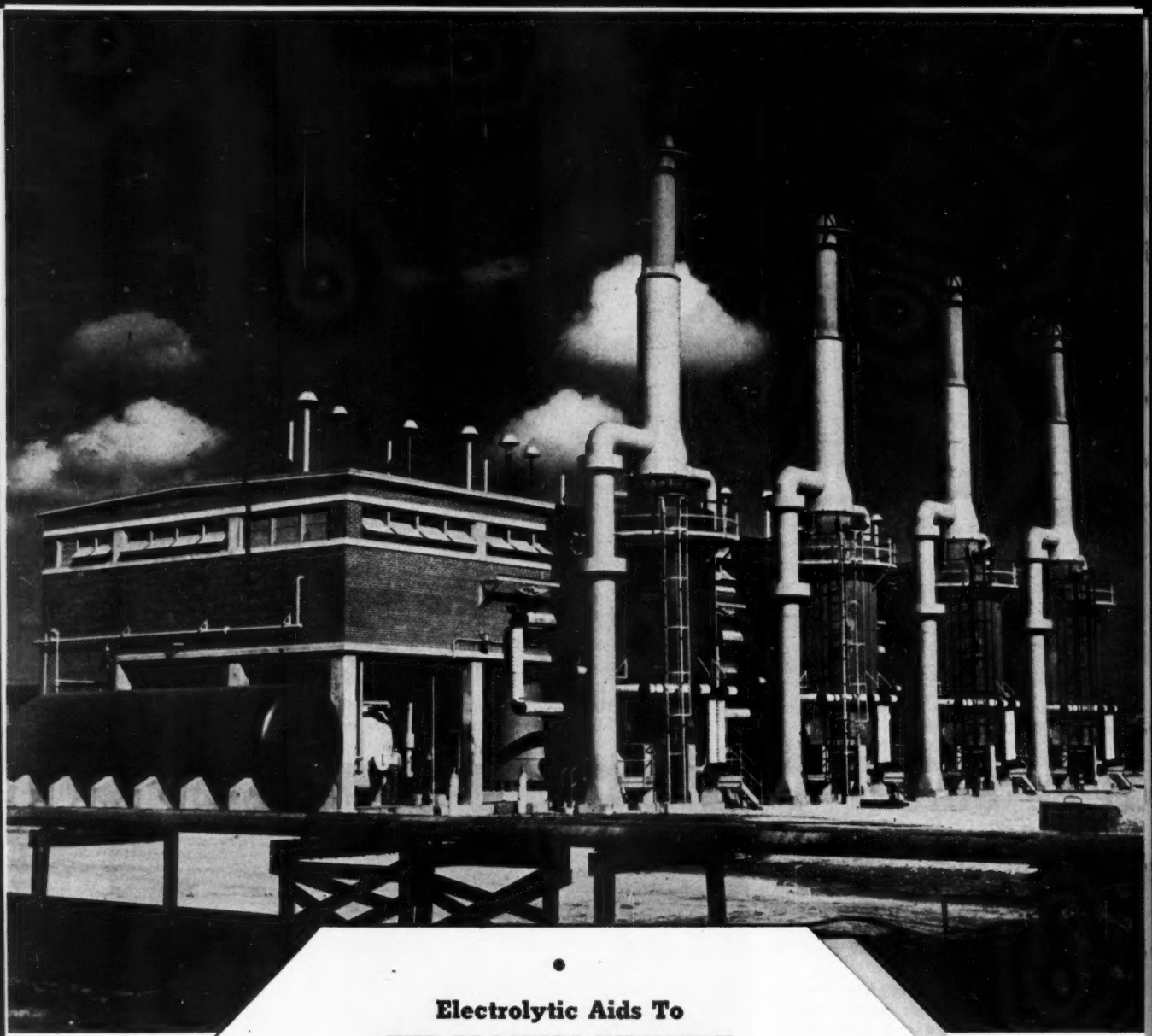
Dorfman, after a year of development work, claims that he has partially solved these problems by employing thermostatically controlled mercury switches to keep the heat within narrow limits—and by substituting a rubber buffer for the bottom half of his pressure clamp. This, he says, eliminates the human factor and gives a uniform seal despite variations in the film itself.

As an added fillip, he has designed a metallic pressure "head" with a "twin-seal" design (*see cut*). A special tape between the head and the film protects the non-heated void between the seals.

Other liner producers* are not so sure that this technique is the final answer. But in the hotly competitive liner industry, any "new" development has a sales value of its own.

4 FINISHED LINER is tested with water. Polyethylene "bags" are being used in both steel and fiber drums for protection of liquid and powdered chemicals.

* Four of the biggest: Chase Bag and Bemis Bros. Bag (both at St. Louis); Flexible Package (Chicago); and Millprint (Milwaukee).



Electrolytic Aids To
THE PLASTICS INDUSTRY

Chlorine and caustic soda, products of the electrolytic industry, are important in the behind-the-scenes steps essential to the production of many plastic materials.

Uniformly high quality **GLC Graphite Anodes** are doing their share to help the electrolytic industry meet the ever increasing civilian and defense demands for chlorine and caustic soda.

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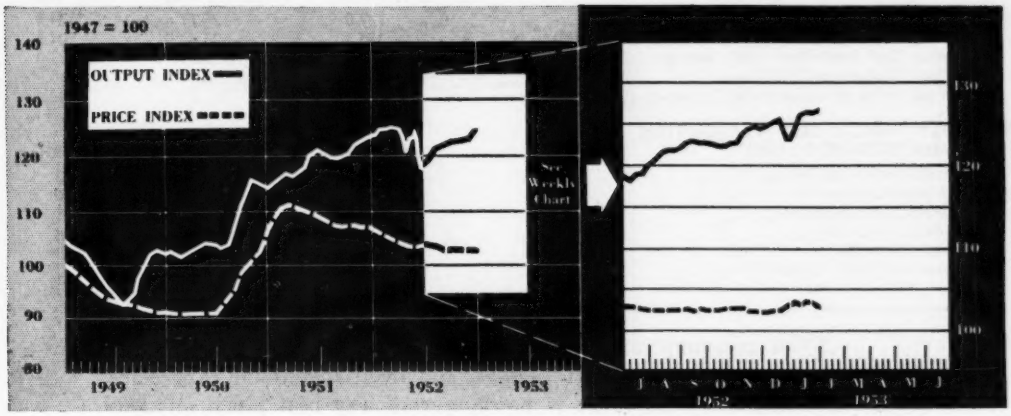


CW Index of Chemical Output—Basis: Total Man Hours Worked in Selected Chemical Industries
CW Price Index—Basis: Weekly Prices of Sixteen Selected Chemicals

MARKET LETTER

By this week decontrol swan songs are emanating from the nation's capitol, and although the music—on the whole—sounds sweet to most CPI businessmen, some are keenly attuned to the discordant notes: higher chemical commodity prices in the offing (CW Market Letter, Dec. 27, '52).

Domestic copper prices, now pressing hard against the OPS ceiling of 24½¢/pound, will no doubt be among the first to shoot upward when—and if—ceilings are removed. Reason: foreign material, currently pegged at 36½¢/pound, is reportedly eyeing a higher 37¢-39¢/pound range.

Sulfur schedules, too, are due for a slight hike if its frozen $21-$22/ton price is thawed out. And there will be other increases; probably for most of the items which are selling at or near established ceilings.

But despite higher prices in some lines, don't look for any general runaway price inflation. Added to the sobering influences of historic supply-demand factors (including buyers' resistance) is this well-known fact: Not a few Washington lawmakers are unconvinced this is the right time for complete decontrol, would be more than happy to reimpose the wraps at the first sign of over-zealous price marker-uppers.

DPA, familiar initials on this page for many months, was erased last week by Presidential order. But though the Defense Production Administration is abolished as a separate agency, its functions will be switched to ODM (Office of Defense Mobilization).

And late last week, another agency, NPA, finally wrote an end to its once long list of chemicals requiring allocation authorization (CW Market Letter, Feb. 7). The order "decontrolling" Thiokol—last of the items governed by Schedule 5 to NPA Order M-45—gives official nod to this fact: Supply of the liquid polymers will amply cover needs of both military and civilian uses.

On the other hand, industry-defense demands continue to squeeze toluol supplies. Both petro and coal chemical producers see little chance for easing in the immediate future. Reason, of course, centers on current requirements for industrial finishes (automobiles, appliances) coupled with sustained—and probably increasing—needs of TNT manufacture and aviation gasoline production.

MARKET LETTER

WEEKLY BUSINESS INDICATORS	Latest Week	Preceding Week	Year Ago
CHEMICAL WEEK Output Index (1947=100)	127.0	126.7	124.8
CHEMICAL WEEK Wholesale Price Index (1947=100)	103.2	103.0	104.3
Bituminous Coal Production (daily average, 1,000 tons)	1,476.0	1,535.0	1,733.0
Steel Ingot Production (1,000 tons)	2,226.0	2,202.0	2,080.0
Stock Price Index of 14 Chemical Companies (Standard & Poor's Corp.)	263.1	261.2	237.4

MONTHLY INDICATORS—PRODUCTION (Index 1935-1939=100)	Latest Month	Preceding Month	Year Ago
All Manufacturing and Mining	235	234	218
Durable Manufactures	313	304	282
Non-durable Manufactures	194	197	185
All Chemical Products	312	308	298
Industrial Chemicals	609	594	563
Petroleum and Coal Products	289	289	281

Xylol consumption, too, is being stepped up, with producers attributing the cause—in part, at least—to the unsatisfied toluol exigencies. At the moment, however, there is no danger of any real pinch on xylol supplies, though some consumers report it's getting more difficult to pick up the phone and order a couple of cars for immediate delivery.

That's just a small straw in the wind, perhaps, but don't be surprised if prices—heretofore fairly even—soon begin to inch up.

Price cuts, "decontrols" and brighter hopes vie for top spot in the metals market. Zinc suffered two ½¢/pound slashes last week—making it four reductions in little over a month—to peg current tags at a low 11½¢/pound (E. St. Louis basis). Reason behind the reduction is to bring domestic price levels in line with foreign material prices—reportedly as much as ½¢/pound less.

But don't expect that bargain price to last. It's bound to bounce higher—and soon. Despite still-shy buyers (CW Market Letter, Feb. 7), stepped-up consumption has whittled inventories.

And late last week, tin was shucked of all government restrictions over its use, sale, shipment and accumulation. The action gives a somewhat belated NPA recognition to the more than favorable supply-vs.-demand tin situation.

Lead sellers, hopefully peeping out from under battered-down prices, see a brightening market in the very near future—probably by next month. Double-pronged reason for the optimism:

- Foreign metal, heretofore offered to the U. S. because of relatively higher prices here, will likely head abroad.
- Cutback in production at some U. S. smelters (CW Market Letter, Feb. 7) will deprive the market of several thousand tons a month.

It adds up to a tightening lead supply and firmer prices.

At the moment, however, there's a question whether last week's ½¢/pound dip has caused lead to reach bottom. But this much is certain: the present 13½¢/pound (N.Y.) pig price isn't pulling in very many lead-hungry customers.

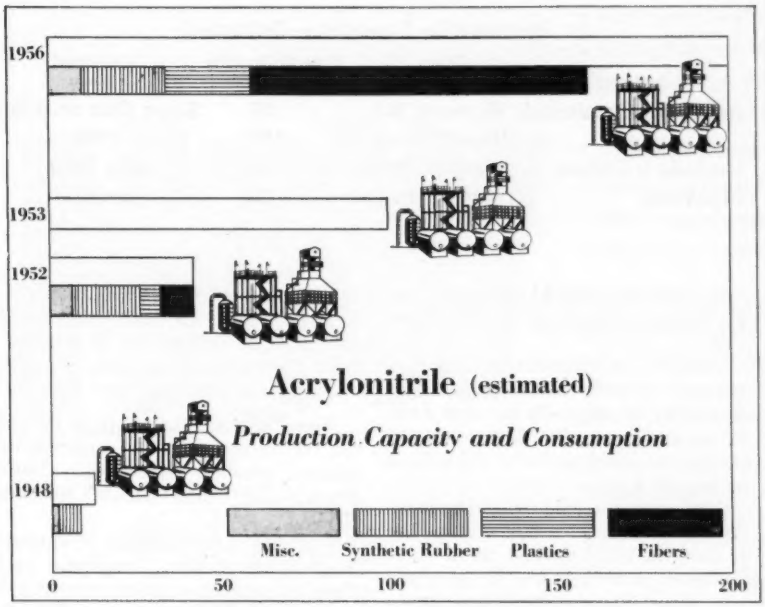
Pesticide buyers, too, are apparently sitting on their formulations. With DDT schedules ranging as low as 23¢/pound (if you can find any at that price), BHC down to less than 1¢ per gamma unit, and the obvious lateness of the season, producers are perplexed at the dearth of customers.

SELECTED CHEMICAL MARKET PRICE CHANGES— Week Ending February 9, 1953

DOWN

	Change	New Price		Change	New Price
Zinc metal, slab, E. St. Louis	$ .005	$ .115	Lead, metal, pigs, prime, N.Y.	$ .005	$ .135

All prices per pound unless quantity is stated.



ACRYLONITRILE: After a long quiet comes the boom.

Pattern in Textiles

Tied to a 10-fold boost in synthetic fabrics by 1956, acrylonitrile destiny is shaping up rapidly.

Chemical experts' prediction: Nitrile rubber, though still growing, will soon yield first place to textiles.

Plastics, soil conditioners fill in background of acrylonitrile expansion picture.

As if to signalize the arrival at another milestone in its path, acrylonitrile is now being offered by a new producer. Monsanto Chemical Co., in current advertisements, is soliciting customers to purchase part of the output of its new plant at Texas City.

Just six weeks ago, Monsanto shipped the first tank car of acrylonitrile to Chemstrand, its co-owned (with American Viscose) acrylic fiber plant at Decatur, Ala. With Chemstrand's requirements apparently all scheduled, Monsanto's open-market offering now gives customers a source alternative from the long lone-seller American Cyanamid.

Slow Start: The step-up in U.S. acrylonitrile production has been a long time coming. Five years ago, this chemical was virtually just a has-been bit player that had enjoyed brief popularity in a minor role of World War II production, for by 1948, requirements for nitrile rubber (then big taker of the material) had plummeted to less than half its war-time high. And usage of acrylonitrile fell off concomitantly.

New Fields: Meanwhile researchers were laying the foundation for acrylonitrile fibers. So well did they build that right now the prospects in fibers threaten to dwarf all other uses.

Just two years ago, Du Pont was beginning to turn out Orlon at a modest rate; Carbide and Carbon's dynel was a short step behind; Chemstrand's Acrilan moved in strictly pilot plant quantities; American Cyanamid's X-51 was unknown.

But witness what has been happening in the past few months: Synthetic fibers have vaulted to a major outlet status; last year they accounted for about 25% (10 million lbs.) of all acrylonitrile.

Resulting end-use picture now looks like Table I.

Market prognosticators say this is only the beginning. Within the next couple of years, the synthetic fibers are expected to supersede nitrile rubber as number one acrylonitrile taker.

By 1956, the pattern may take on the form of Table II.

Acrylonitrile fiber expansion is explosive. Four years ago production was virtually nothing; last year's output (based on staple prices) might have netted a respectable $20 million. But three or four years from now, if the experts' estimates obtain, no less than $150 million of synthetic fiber material annually (plus almost again as much acrylonitrile for other uses) is expected to spout from the plants of three producers.

Assuming that American Cyanamid will proceed with its New Orleans plant according to schedule, the acrylonitrile producers' line-up will shape up as in Table III.

This sudden burgeoning is the cooperative result of two fundamentally different factors:

- Eager textile manufacturers, looking for a tonic to brace up a sick industry, are ready to latch onto an apparent profit maker.
- Solid, established chemical manufacturers, confident of the values of their material, are willing to invest the multimillions needed for economical size plants.

The results of this combination can be dynamic. And, as in the case of any successful marriage of two divergent personalities, it requires a great deal of mutual understanding. This both chemical men and textile men well realize.

At What Price? Prime factor determining the size of the market of the textile fibers is the cost of acrylonitrile.

Textile men are accustomed to tagging their wares as a multiple of the cost of the staple from which they're fabricated. Despite the private opinions of some chemical men as to what

Table I

Consumption — 1952 (est.)

Use	Millions of Pounds
Nitrile Rubber	20
Synthetic Fibers	10
Plastics	5
Miscellaneous	5
Total	40

Table II

Consumption — 1956 (est.)

Use	Millions of Pounds
Nitrile Rubber	25
Synthetic Fibers	100
Plastics	25
Miscellaneous	10
Total	160

Table III

Acrylonitrile Capacity — Estimated

Producer	Plant Location	Annual Capacity (Millions of lbs.)	On-stream When
American Cyanamid	Warners, N.J.	30	Basic Unit ca. 1940
	New Orleans, La.	100	1954
Carbide & Carbon	Institute, W.Va.	35	late 1952
Monsanto	Texas City, Tex.	35	late 1952
	Total	200	

price synthetics should command, textile industry custom will probably prevail.

Recently, one chemical marketer expressed himself half-jokingly, half-wishfully, "If we could get cost down to enable us to offer fiber at 50¢ a pound, we could probably sell billions of pounds a year."

Viewed in the cold light of present-day materials costs a 50¢ acrylic fiber is about as likely as a 5¢ beer.

Based on today's 43¢/lb. acrylonitrile, going rates for staple have been: Orlon, $1.90/lb.; Acrilan, $1.85/lb.; dynel (40% acrylonitrile, 60% vinyl chloride), $1.28/lb.

Given time to trim operation costs, producers may lower the acrylonitrile price to perhaps 30¢. With that base, staple prices might range 20-25% lower, say from $1.40 down to $1.00.

One premise for keeping costs down: the plants must be run full blast. This is a likely condition, however, since acrylonitrile operations (unlike those for some other chemicals, *e.g.*, chlorine) proceed on an all-or-none basis.

That's why it's so important that the textile chemical men work in close co-operation.

Other Hopes: Because most of the intended increase pinpoints in one field, the setup assumes an eggs-in-one-basket aspect.

True, outlets other than textile fiber are opening. But even lumped together, their combined expected consumption falls far short of the anticipated textile market.

In nitrile rubber, for instance, as a result of expanded development, the post-war decline has been regained. By 1951, production approached the 1944 peak; in terms of acrylonitrile, 1951 consumption approximated 12 million lbs.

This past year chalked up further gains. One preliminary estimate sets 1952 nitrile rubber acrylonitrile consumption at 20 million lbs.

But for the long pull, nitrile rubber has inherent limitations. Main disadvantage is probably its high cost relative to competitive materials.

And even if nitrile rubber should attain the predicted 1956 rate of perhaps 80 million lbs. this end use will take only 25 million lbs. of acrylonitrile—a respectable amount, but still only 15% of total projected capacity.

New Plastics: Much hope is pinned on the future sales of acrylonitrile-styrene plastics. Examples: Dow's Saran F-120, Union Carbide's Bakelite C-11.

Carrying makers' claims of unusual dimensional stability, toughness and chemical resistance, they represent a type expected to move at an 80 million lb. annual clip within the next three or four years.

As in the case of nitrile rubber, present formulas of these plastics translate to roughly 25 million lbs. of acrylonitrile slated for 1956.

Soil Conditioners: A year ago, the exciting possibilities of adding chemicals to condition soil conjured visions of mountains of chemicals being put to this use. With practically unlimited fields—literally—of application, soil treatment markets indicated tonnage potentials on the scale of fertilizers.

The last word on conditioners has not been written, to be sure. But the stellar role originally planned for acrylonitrile has shrunk. Early in the play, Monsanto switched its formulation from an acrylonitrile type to a vinyl acetate/maleic acid polymer. (That's the one they're currently pushing in England.)

American Cyanamid, on the other hand, continues to offer its hydrolyzed polymer of acrylonitrile. Sales pitch, of late, though, has been pointed toward limited scale uses, such as strip application.

Resulting outlook: A relatively minor market compared to fibers, plastics or nitrile rubber.

Forward Look: By and large, the main road ahead for acrylonitrile appears to be well laid out along synthetic fiber lines. But price barriers limit the course.

Textile manufacturers and chemical makers are nevertheless on their way. Provided they remain united, they stand to gain at least half the acrylonitrile world.

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The uses mentioned above are just a few of the many potential applications for these versatile materials. If any of these uses suggests an answer to one of your problems, we'll be glad to work with you in developing the right base and the right formulation to do your job.

For years we've polymerized vinyl acetate in solution form, perfecting our manufacturing processes to "tailor" these solutions exactly to our own needs in adhesive formulations. We have recently expanded our capacity, so that now the technical background and quality control know-how that this experience has given us is available to you. For further information or technical assistance, mail in the coupon.

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New Nation-wide Du Pont

3 OUT OF 4 DEALERS

HOW THE SURVEY WAS CONDUCTED. An independent, nationally known research organization conducted the newest Du Pont Survey of the market for aerosol products. Retail dealers were interviewed in six major classifications of trade in 60 representative cities.

The study offers opportunity to review many basic points in comparison with findings of earlier surveys. To provide reliable answers, interviewers talked with as many people (owners, managers, assistants, and clerks) as were necessary to obtain a satisfactory report. This proved particularly important in connection with department stores which frequently employ buyers, clerks and others best qualified to discuss specific items.

The survey itself was conducted during the month of July 1952, and the data obtained has since been assembled and condensed. This sixth annual Du Pont Survey "Digest" of the market for aerosol products is the only report of its kind.

WHERE THE SURVEY WAS MADE. *The 60 cities listed below represent a cross-section of the market for aerosol-packed products throughout the country. It will be noted that they include large metropolitan cities, medium-size centers and smaller shopping areas.*

Albuquerque, N. Mex.	Dallas, Texas	Memphis, Tenn.	Pittsburgh, Pa.	Shreveport, La.
Amarillo, Texas	Denver, Colo.	Miami, Fla.	Portland, Me.	South Bend, Ind.
Asheville, N. C.	Detroit, Mich.	Milwaukee, Wis.	Portland, Oregon	Spokane, Wash.
Atlanta, Ga.	Fresno, Calif.	Minneapolis, Minn.	Providence, R. I.	Springfield, Mass.
Baltimore, Md.	Grand Rapids, Mich.	Montgomery, Ala.	Rochester, N. Y.	Springfield, Mo.
Birmingham, Ala.	Houston, Texas	Newark, N. J.	St. Louis, Mo.	Syracuse, N. Y.
Boston, Mass.	Indianapolis, Ind.	New Haven, Conn.	Sacramento, Calif.	Topeka, Kansas
Chattanooga, Tenn.	Kansas City, Mo.	New Orleans, La.	Salt Lake City, Utah	Tulsa, Okla.
Chicago, Ill.	Lexington, Ky.	New York, N. Y.	San Francisco, Calif.	Utica, N. Y.
Cincinnati, Ohio	Little Rock, Ark.	Omaha, Nebraska	Savannah, Ga.	Washington, D. C.
Columbia, S. C.	Los Angeles, Calif.	Peoria, Ill.	Scranton, Pa.	Wheeling, West Va.
Columbus, Ohio	Madison, Wis.	Philadelphia, Pa.	Seattle, Wash.	York, Pa.

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. . . THROUGH CHEMISTRY

"FREON" SAFE

Survey Reveals NOW STOCK AEROSOLS

Important New Facts About Best Markets

Results of the sixth annual survey conducted by the "Kinetic" Chemicals Division of the Du Pont Company show that 3 out of 4 retail dealers interviewed from coast to coast now stock one or more aerosol products. The report contains a fund of information about this rapidly growing industry.

PURPOSE OF THE SURVEY. The Du Pont aerosol market surveys are designed as a service to the aerosol industry. They provide a complete picture of expanding markets for pressure-packed products of many kinds. Significant changes are shown in the distribution of aerosols. The study also analyzes dealer opinions and reveals important trends.

Whereas, only a few years ago, aerosol products were limited in number and uses, today there are hundreds of these products. These are steadily gaining in popularity, and an increasing percentage of retail dealers (now 82% on weighted basis) are stocking aerosols. Because of this rapid advance, a more extensive survey became necessary to keep pace with the progress of the industry as a whole. It is now proposed to conduct a dealer survey one year and a consumer study the next, alternating each year between the two. The current report, therefore, covers the field of retail sales outlets.

GREATLY EXPANDED STUDY. The new study embraces a total of 2,233 personal interviews conducted with qualified respondents in major retail outlets throughout the country. The selected retailers form a representative cross-section of retailers in six major classifications of trade. Approximately the same number of outlets were visited in each group.

The expanded study included sixty cities listed on the page opposite. They were carefully chosen to give coverage of various city-size groups.

IMPORTANCE OF STORE SIZE. An innovation of the current study is the classification of outlets as "large," "medium" and "small". . . based upon evaluation of individual stores in comparison with others of the same type in the same market area. The breakdown offers a better indication of marketing activities in the different store sizes and shows, for instance, that a greater number of large stores than of small stores carry aerosols.

DEALER REACTIONS FAVORABLE. Analysis of the opinion of retail dealers who stock aerosol products in all divisions of trade again shows that this comparatively new method of dispensing is steadily gaining importance. Increases in distribution of aerosols show up in all classifications. For example, insecticidal aerosol distribution through drug stores has reached 98% . . . showing proved acceptance.

SURVEY "DIGEST" SENT ON REQUEST. These are just a few of over 100 questions about aerosol products reviewed and answered in the current "Digest" of the Du Pont Survey. It's a comprehensive report and a copy of it will gladly be sent upon request.

In addition, if you want specific advice concerning the design, manufacture or marketing of one or more aerosol products, technical help may readily be obtained from the "Kinetic" Chemicals Division of the Du Pont Company . . . manufacturers of "Freon" propellents used in almost all pressure-packed products now available.

IMPORTANCE OF "FREON" PROPELLENTS. "Freon" propellents are widely used in the production of aerosols because, first of all, they are entirely safe. They are nonflammable . . . nonexplosive . . . virtually nontoxic . . . and their chemical make-up is such that they are highly satisfactory for all types of aerosols.

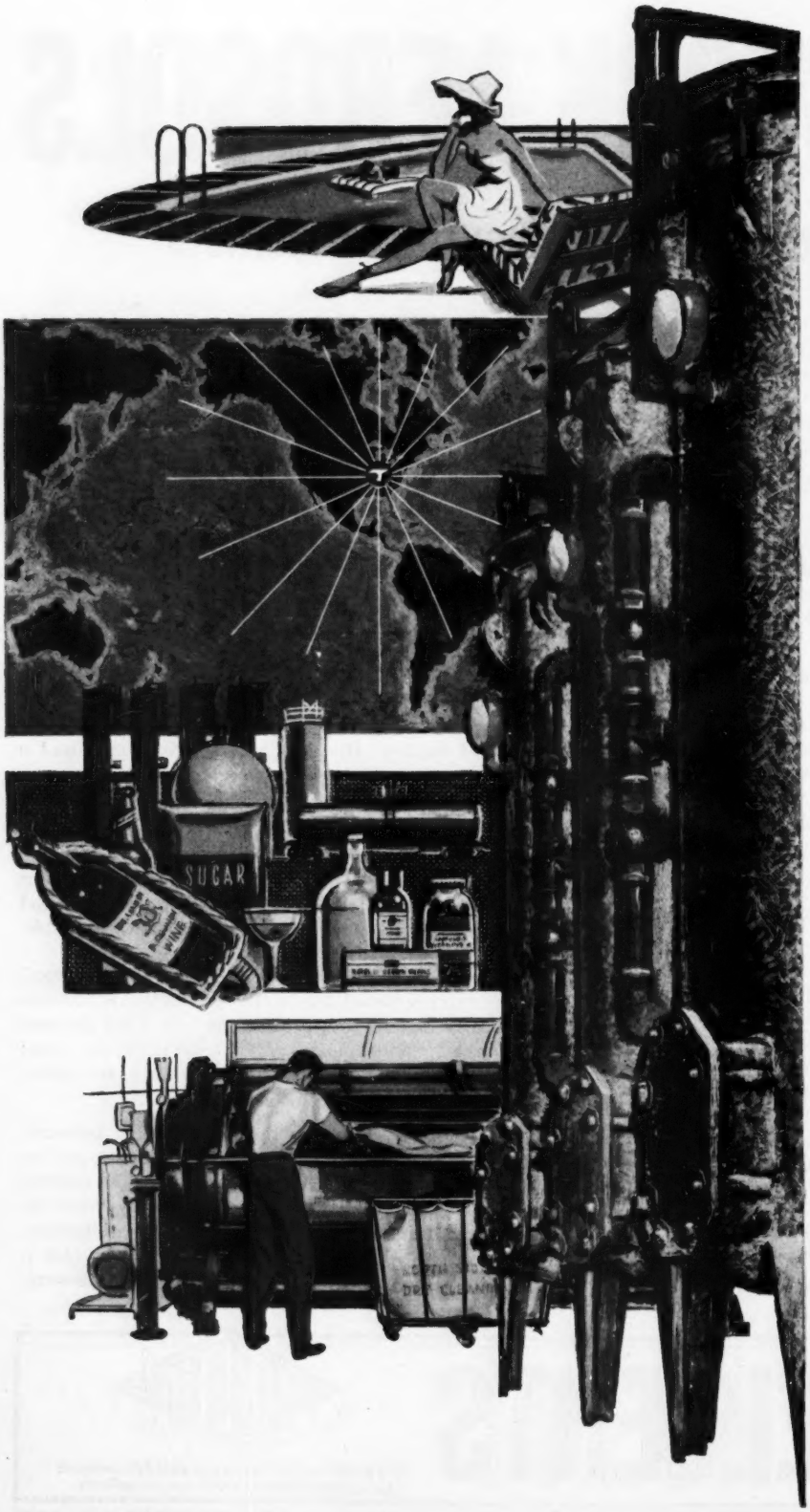
Give thought—now—to the possibility of pressure-packaging one or more of your own products. As the Du Pont Survey shows . . . the popularity of this method of dispensing is proving a big booster of sales. Write for your copy of the Survey "Digest" today. No obligation, of course. E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Div., Wilmington 98, Delaware.

PROPELLENTS

KINETIC REG. U.S. PAT. OFF.

"FREON" is Du Pont's registered trade-mark for its fluorinated hydrocarbon propellents.

THERE'S A TOUCH OF TENNESSEE IN FILTRATION



TENN-FLO, Tennessee Products' new filter aid, promotes sparkling clarification in a wide variety of filtering operations. Inert and sterile, TENN-FLO is readily adapted to filtration in brewing, sugar refining, vegetable oil refining, dry cleaning, water purification and in many other chemical and industrial processes.

TENNESSEE supplies similarly basic products to industry everywhere. That's why TENNESSEE is known as an industry serving all industry.

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FUEL OIL DELIVERY: For a better ¼ billion barrels, $2 million in additives.

Building a Better Fuel Oil

Fuel oil additives for the 249 million barrels of U. S.-consumed heating oils have just tempted in more makers of chemical improvers.

Cracked stock-straight run fuel oil blends—on the increase since Korea—have boosted demand for additives.

One estimate: Potential for improvers is 10 million pounds annually.

Monsanto has just introduced its Santolene H; Oronite is now set to go full-scale with Dispersant FO*; Du Pont will begin heavy promotion of Fuel Oil Additive #2 in March. That's the news for 1953 in fuel oil additives, burgeoning chemical adjunct to the petroleum industry.

That adds three more products to the list of additives that includes such major compounds as Dacarol A (Dacar Chemical Products Co., Pittsburgh, Pa.); Ionad 17 (Shell Chemical Co.); Nalco Sr-155, -158, and -160 (National Aluminate Corp., Chicago), Sabanol (American Sand-Banum Co., Inc., New York); Santolene C and F (Monsanto); and UOP Fuel Oil Inhibitor 176-5 (Universal Oil Products Co., Chicago, Ill.).

A concern of refineries for a decade or more, the need for chemical heating oil improvers didn't really blossom until the Korean conflict. Then, as refineries hiked output of aviation gasoline and other cracked products, the quantity of cracked stocks blended with straight run oil increased—as did the requirements for additives. For cracked stocks contain substantial amounts of unsaturates, olefins that tend to agglomerize, form filter, and nozzle plugging gums.

Drop in the Bucket: And gum formation is just what additives prevent. Incorporated in surprisingly low amounts (typical dosages call for 20-25 pounds of additive per 1000 barrels of oil), they keep gum particles dispersed, slow moisture-caused sludge formation, and cut rust and corrosion.

Actual consumption of the valuable compounds has been obscured as the demand has mounted in recent years. Estimates are vague; one source hazards that perhaps 75% of the major refiners, 25% of the smaller ones, use the chemical furnace oil improvers. Another figures that roughly 40% of No. 2 oil is treated with an inhibitor or inhibitor-dispersant products. (Recent Bureau of Mines figures place fuel oil consumption at 249,000,000 barrels/year—of that, an estimated 95% is the No. 2 oil.)

As for the potential market, one additive maker sees it to be 10 million pounds/year.

Little a Long Way: And the market won't likely dwindle: Benefits from the additives are too great. For a cost that varies between ½¢ and 3 cents/barrel (simple rust inhibition comes even lower*), the refiner is able to incorporate more cracked stock—and at a lower cost. Home owners get a better oil, and oil distributors have a selling and advertising point.

The refiner's cost is cut—use of additives can reduce by 50% the amount of acid-caustic treatment for removing olefins—and permits use of up to 100% more cracked stock in fuels.

The home owner benefits by having an oil less likely to clog, and can cut on the maintenance costs—sometimes can forget the annual line cleaning. An annual survey of some 325 fuel oil dealers, conducted by *Fueloil & Oil Heat* magazine shows that service calls due to "bad oil" dropped from 6% of the total in 1946 to half that in 1952—reached a low of 0.6% in 1951.

And in addition to bringing a competitive advantage to a distributor, the improved oil, with reduced attendent service calls, means a better way to fight the gas-heating unit salesman, plus less corrosion in storage tanks and pipes.

Refiner, Distributor: Most of the additives are put in by the refiner, although the distributor can put them in simply enough, since many are in an oil diluent, and all are liquids easily metered in.

As to precise composition of these products, no company will talk freely. They are generally described as dispersants, or surface-active agents, and inhibitors. There appears to be two main types—metallic and non-metallic based.

Examples of the metallic types are Enjay's Paradyne HO-2, Santolene F, and Shell Ionad 17 (likely essentially

* Same as parent Standard of California's Super Thermisol.

* East of the Rockies, little if any distinction is made between diesel fuel and furnace oil, whereas refiners in the West have been able to produce a perfectly acceptable furnace oil at a lower price by separating the diesel and furnace components. But since the additives do no harm in diesel fuels, they can be added indiscriminately to the Eastern product that goes to both domestic heating and diesel fuel markets. Outside of their rust-inhibiting properties, however, additives are of no real value in diesel fuel, so Western refiners and distributors treat only the furnace oil component.

the same as Shell Oil Co.'s FOA-5X). These are generally barium or calcium sulfonate products, similar to lubricating oil additives (*CW, June '7, '52*). Many firms make their own sulfonates, others purchase them from companies like L. Sonneborn Sons, Inc. (New York), which produces only basic sulfonates—doesn't sell additives.

Both the new Du Pont Fuel Oil Additive #2 (known also as PL-161) and Monsanto's Santolene H are described as non-metallic based products. Just what they are based upon isn't revealed. But one cousin of the barium and calcium sulfonates is an ammonium sulfonate, and at least one well-known refiner has an additive which is just that. The touted advantage of the non-metallics is that they don't leave metallic residues when burned.

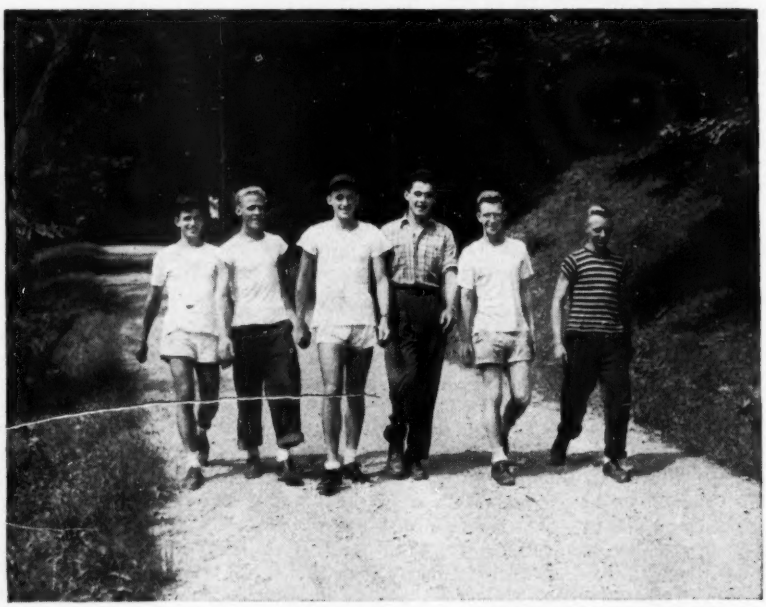
Not to be overlooked are the additives packaged for consumer use. Typical of these are Ox'o Gas Co.'s (Palisades Park, N.J.) Ox'o Fluid, and Cristy Specialty Corp.'s (Worcester, Mass.) Cristy Oil Conditioner.

The low-viscosity No. 2 oils for the most part do not require viscosity improvers or pour point depressants such as lube oils need. There are some products designed for the heavy, bunker fuel oils; E. F. Houghton & Co., (Philadelphia) makes one such improver.

Best Test: The relative newness of fuel oil additives is apparently responsible for the general lack of standardization in additive test procedures. Lab tests for corrosion protection are generally indicative of actual consumer performance, but for anti-sludging qualities, field testing is about the only sure trial. Currently, most of the improvers on the market have been home-tried for a year or more. And results of these tests, with only .005-.04 weight percent additive, have put a happy gleam in the eye of both producer and user.

EQ-53 Follow-up

Formulators of the USDA-developed EQ-53 last week were receiving supplementary information about the mothproofing laundry additive. Major point of the new bulletin concerns the concentration of DDT. In



For the Good of the Sole

WALKED ON until it's worn out—that's the practical test Goodyear Tire & Rubber Co. gives its Neolite soling material. Around its Windsor, Vt., plant, college students vie for the chance to hike the hills wearing Goodyear shoes—and get paid for their strolls. Above, a group of "researchers" helps put on the more-than-1,600 foot-miles the synthetic soles have been tested. The plastic, which Goodyear cagily describes only as an "elastomer resin blend," has been city-tested also: A group of sightseers in Washington walked over 300 miles to give the soles a thorough trial.

Hands are wonderful, but...

● Hands are wonderful, intricate mechanisms. They provide great strength for the workman and the athlete . . . life-saving sensitivity and skill for the scientist and the surgeon . . . nimble precision for the musician and the artist . . . and commonplace but vital performances for everyone.

But . . . hands are the world's most inefficient mechanism for handling bulk materials!

Among the modern, automatic methods developed for transporting and handling bulk materials, Dracco Airstream Conveyors rate as one of the best. If you move large quantities of bulk materials investigate the many cost-saving advantages produced by "Performance Proved" Dracco Airstream conveying systems. The full story of the economies and advantages of the Dracco Airstream technique is presented in Dracco Bulletin 529 which will be sent to you on request.

DRACCO CORPORATION, 4080 East 116th Street, Cleveland 5, Ohio.

DRACCO *Performance Proved*

Airstream **CONVEYORS · DUST CONTROL EQUIPMENT**

the formulas first published (*CW, Jan. 10*), 30% DDT, 10% emulsifier, and 60% solvent were the ingredients. Now, in order to insure that the DDT won't crystallize out at low temperatures (as low as 20 F), the solvent concentration has been upped 5% and the DDT decreased a like amount.

Another change is an alteration of the solvent specifications. Color must be water-white, but a Saybolt chronometer reading of 21 instead of 25 is permitted, as well as a minimum flash point. Tag closed cup of 105 F, instead of 115 F, Cleveland open cup.

The PMA-suggested label has been modified with addition of the phrase: "Do not pour, spill, or store near fire or open flame."

Firm Stand: Outside of these slight changes, the USDA has been adamant as to what will constitute EQ-53 formulations. Several makers of similar emulsifiable concentrates of DDT have expressed a desire to include the EQ-53 tag on the labels of their present products. For obvious reasons, the USDA has ruled against this.

Also, the USDA stands firm against reduction of the emulsifier content; 10% provides an intentional "safety margin" to cover the widest possible range of conditions. And non-ionic emulsifiers only—not mixtures of non-ionics and ionics.

As for advertising, the USDA will hold to its April 18 consumer-release date, but suggests that formulators prepare material for magazines dated April, although they come out in mid-March.

Soil Aid from Italy

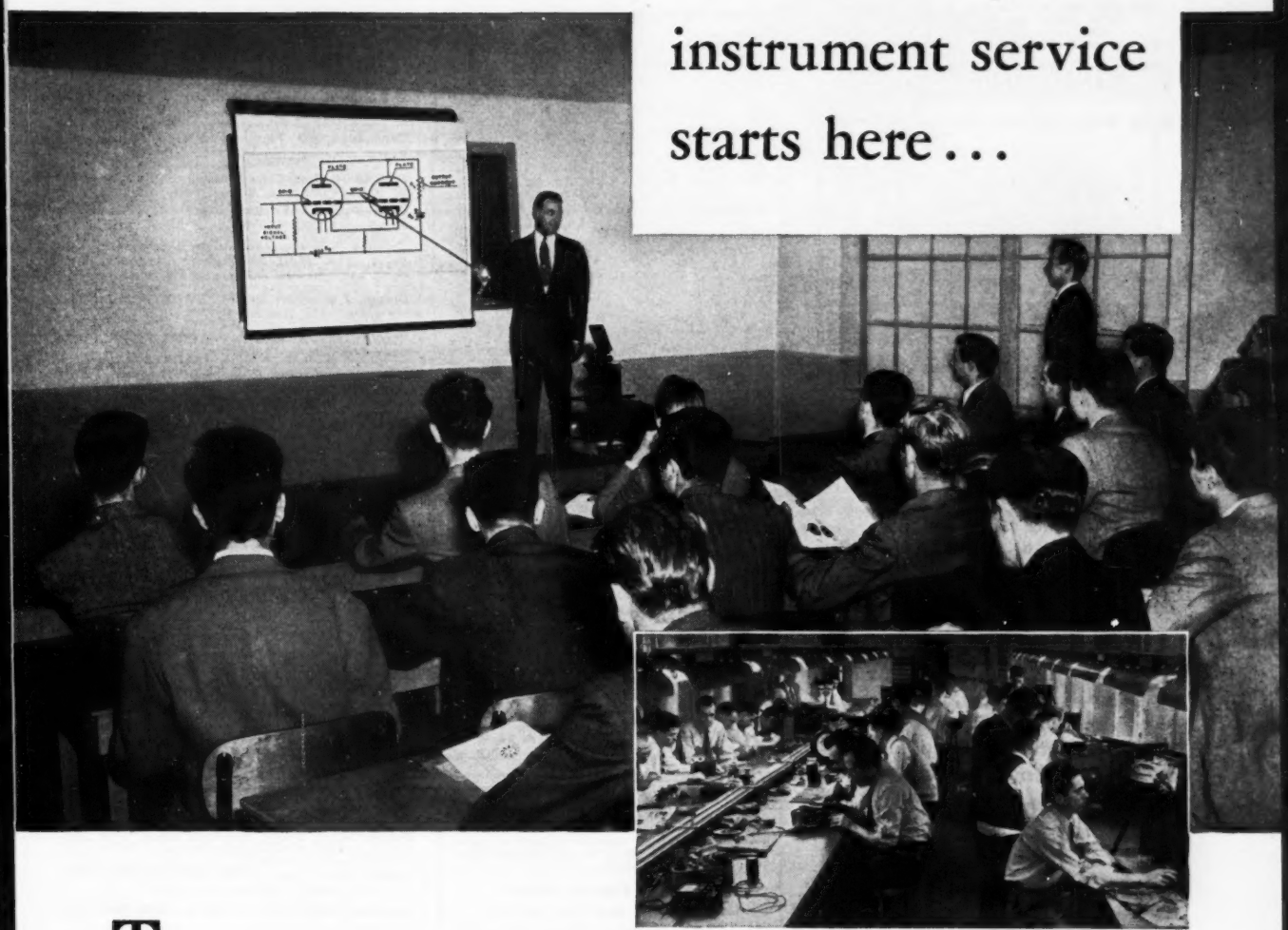
Last week Stauffer Chemical Co. took the wraps off its new ferric ammonium organic complex soil conditioner Flotal, word of which has titillated the industry for the past two months (CW, Dec. 13, '52).

Flotal is an Italian development (*CW, Jan. 10*), the work of some 10 years of field testing and production development headed by M. Gasparini at Rumianca Societa Per Axioni of Turin. Stauffer has obtained exclusive American rights to the product, and with the granting of the U. S. patent (2,623,919), has finally opened up a bit on the new conditioner.

Described by Stauffer as completely unlike any other soil conditioner on the market, it is "essentially nature's own soil conditioner in a highly concentrated form—utilizes the slow action of natural top-soil building, but greatly accelerates the process." In addition, Flotal provides a little over 2% nitrogen, 2% iron, and sulfur.

And it's significantly lower in price

Your Honeywell instrument service starts here...



THOROUGH TRAINING is the foundation of Honeywell instrument service. In classrooms and in the Honeywell factories, hand-picked men first are schooled in both the theory and practical art of keeping good instruments in the best condition.

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MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4584 Wayne Ave., Philadelphia 44, Pa.

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ORGANIC CHEMISTS

Several wanted for research and experimental work in fast growing chemical plant in West Virginia. Excellent opportunity. Must be experienced.

P-6772 CHEMICAL WEEK
330 W. 42nd St., New York 36, N. Y.

Positions Vacant

Sales Manager to organize sales of electronic instruments and controls to process industries. New division of old and well established company. Initial acceptance of product indicates tremendous market. A challenging opportunity for a man with ability, experience, and ambition. P-6722, Chemical Week.

Positions Wanted

District Manager, 44-year-old MIT chemical graduate with 18 years experience in sales with large manufacturer of industrial and specialty chemicals desires position in smaller but progressive organization, preferably in East where his initiative, training in all phases of sales work, knowledge of chemical markets, ability to sell and direct selling efforts of others may be fully utilized to create a permanent, responsible place for himself. PW-6697, Chemical Week.

Export Executive, top record, now employed, with proper background to handle foreign activities and interests towards maximum Tax Savings and Income, desires challenging assignment. PW-6734, Chemical Week.

Selling Opportunities Wanted

MANUFACTURERS' AGENT

- Now Handling Prominent Manufacturer's crushing — grinding — separation and mixing equipment.
- Desirous of expanding with allied or related line serving the chemical process industries in all or part of Atlantic Seaboard.

RA-6168 Chemical Week
330 W. 42nd St. — New York 36, N. Y.

EXPORT REPRESENTATIVES

CHEMICAL EXPORT COMPANY, 15 years in business, adequate domestic chemical technical sales personnel and permanent foreign travelling staff would like to act as export department or representatives and push export sales of chemical manufacturers, commission basis.

RA 6672 Chemical Week
330 W. 42 St., New York 36, N. Y.

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Processes

CUSTOM SPRAY DRYING

Complete facilities for limited or volume spray drying. We offer over 20 years of experience.

SPRAY DRYING SERVICE, INC.
501 North Avenue, Garwood, New Jersey
Phone: Westfield, N.J. 2-1829

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SALES

MARKET DEVELOPMENT

During 1952 we did market research and sales work on several intermediates and by-products for large chemical manufacturers, closing important long-term contracts for T/C quantities with new customers. If you can use an organization capable of producing volume sales, call or write:

CHEMICAL AFFILIATES, INC.
274 Madison Ave., N.Y. 16., N.Y. MU 3-4731

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For Sale

Agitated Reactor 347 SS 30 gal. complete. Equipment Clearing House, 285 10 St., Bklyn. 15.

For Sale

Autoclaves, Steel, Hor. 66"x14'7". First Machin- ery Corp., 157 Hudson St., N.Y. 13, N.Y.

B & P Jktd. Mixer-150 gal. w.c. $1250.00, Aaron Equip Co., 1347W S. Ashland Ave., Chic. 8, Ill.

Centrifuge, 40" Fletcher, SS type 304. Heat & Power Co., Inc., 70 Pine St., N.Y. 5.

Davenport Press-Size 3-Aaron Equip Co., 1347 W S. Ashland Ave., Chic. 8, Ill.

Dryer-Buflovak Vacuum Drum—24"x20". Aaron Equipment Co., 1347W S. Ashland Ave., Chic. 8, Ill.

Dryer, Vac. Shelf 20 Shelves, 59 x 78, pump cond. (5). Consolid'd Prod., 18 Pk. Row, N.Y. 38.

Dryers, 2 Stainless Drums; 5'x10'. First Machin- ery Corp., 157 Hudson St., N.Y. 13, N.Y.

Dryers—Rotary, 8'x54', dir. heat, roller, brngs. Consolid'd Prod., 18 Pk. Row, N.Y.C.

Filler—Brand new Mojonnier 24-sprout rotary stainless vacuum filler, never used. FS-6778, Chemical Week.

Filter, Sweetland #7, 41 taps. Heat & Power Co., Inc., 70 Pine St., N.Y. 5. Hanover 2-4890.

Filter Press, 42" x 42", Iron, Shriver, 18, 27, 36, 54 chambers (12). Consolidated Products, 18 Park Row, N.Y., 38.

Filters, all sizes and types. Perry Equipment, 1415 N. 6th St., Phila. 22, Pa.

Filters—Headquarters for stainless steel diatom- aceous earth filters, including Niagara, Sparkler, Klein, Enzinger, etc. Chas. S. Jacobowitz Co., 3080 Main St., Buffalo 14, N.Y. Phone AMherst 2100.

J. T. Homloid Machine with or without motor, must be in good condition. Call Market 2-3113, Newark, New Jersey.

Kiln, Rotary, 4'x60'x½". Heat & Power Co., Inc., 70 Pine St., N.Y. 5. Hanover 2-4890.

Labelers, All types, Rebuilt & Guaranteed. Proc- ess Industries, 305 Powell St., Brooklyn.

Mills, Traylor tube, 5'x22", 5'x20", 4'6"x18'6", 4' x 13', stone lined pebble charge (4). Consolidated Products, 18 Park Row, N.Y. 38, N.Y.

Mills, Day 14" x 30" 3 roll high speed roller (8) Consolidated Prod., Inc., 18 Park Row, N.Y. 38.

Pebble Mills; 8'x8', Porcelain lined. First Ma- chinery Corp., 157 Hudson St., N.Y. 13, N.Y.

Pebble Mills 10 gal. to 800 gal., porcelain lined 20. Consolidated Products, 18 Park Row, N.Y. 38.

Reactors, Pfaudler Jktd. 400 Ga. First Machinery Corp., N.Y. 13, N.Y.

Refrigeration Equipment—Used, 2-6½ York Late Type Ammonia Compressors—4x4 & 3x3 York Self Contained Units. Low Pressure Blowers, Agitators, etc. John F. Carson, A & Venango Sts., Phila 34, Pa. GArfield 6-2221.

Tanks—14—8300-gallon one-piece A. O. Smith glass-lined tanks, 10' O.D. x 16' long still installed, immediate delivery. FS-6779, Chemical Week.

Tanks, Alum, closed—330, 480 and 1450 gal. Perry Equipment, 1415 N. 6th St., Phila. 22, Pa.

Tanks, Steel, Processing, 15,000 gal. vertical, 80 lbs. int. pr.; Turbo agitator 40 HP, coils. Perry Equipment, 1415 N. 6th St., Phila. 22, Pa.

Tanks, S/S, from 30 gal. to 5700 gal. Perry Equipment Corp., 1415 N. 6th St., Phila. 22, Pa.

Tanks, S/S, 1000 gal. horizontal, sanitary, full vacuum, shell jacketed. Steel tanks horizontal, Lastiglas lined, 5300 to 7500 gal. L. E. Glick & Co., 626 Broadway, Cincinnati 2, Ohio.

Wanted

Machinery, Chemical and Process. Everything from single item to complete plant. Consolidated Products, 18 Park Row, N. Y. 38.

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Dryers	Pressers
Filters	Pulverizers
	Tanks

Interested in complete plants—either now operating or idle. Give full particulars when writing
W 3117 Chemical Week
330 W. 42nd St., N.Y. 36, N.Y.

Weedkiller on Wheels

SECRET WEAPON in the railroads war against weeds are herbicide spray cars now being readied for the spring weed onslaught. National Aluminate Corp. (Chicago) has built the car above, equipped it with nozzles mounted to soak weeds on the trackbed, and special "turrets" to pump weedkillers on underbrush along the right-of-way.

Railroads have used increasing quantities of herbicides like 2,4-D and 2,4,5-T to remove undergrowth which is both unsightly and a fire hazard. In this special car, the nozzles and turrets are controlled from a single panel within the unit.

---

than Monsanto's well promoted Krilium. A 25-lb bag of Flotal costs $4.45, treats 100 sq. ft. of soil (about 4½¢/sq. ft.; Krilium, with recent price reductions, is about 6½¢/sq. ft.). Even a quarter of the recommended dosage shows up well, but Stauffer wants to avoid the experience of some firms, whose ears are still ringing with consumer claims of "no results."

Clay Builder: As with nearly all SC's, most strikingly improved are clayey soils. In Italy, Flotal made a dramatic improvement in Appenine clays—clays which had been unproductive for centuries. In this country, tests at Stauffer's agricultural labs in Los Altos, Cal., show that definite improvement can be noted in one week; a 90% improvement in less than two weeks. And benefits continue to accrue as late as two years after application. Currently, the University of California and the USDA are experimenting with Flotal.

Though Stauffer eyes the large farm acreage as top outlet for its materials in the future, it is currently producing Flotal only in its Richmond, Cal., plant for limited distribution in Northern California garden stores. Schmeidell & Co. (San Francisco) is the distributor; Stauffer will let others make it on a sublicense basis.

Flotal is the second Rumianca product brought to this country by Stauffer in recent months. Previously, Stauffer had obtained exclusive American rights to Rumianca's process for making pelleted superphosphate fertilizer without aging (*CW Newsletter, Aug. 9, '52*).

•

Anti-flu Boost: Boosted output of flu vaccines should be felt by next week, when the first segment of Parke, Davis, & Co.'s hiked production is made available. The high incidence of influenza cut deeply into reserve supplies of the vaccine last month.

•

Farm Pharmaceuticals: But human diseases aren't the only ones to receive attention lately. Dr. A. H. Moseman, Chief of USDA's Bureau of Plant Industry, Soils, and Agricultural Engineering told CHEMICAL WEEK last week that increased understanding of the absorption and translocation of antibiotics in plants may lead to the use of these for control of plant diseases.

CHEMICAL WEEK • ADVERTISING INDEX

FEBRUARY 14, 1953

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Detroit 26 .....356 Penobscot Bldg., Woodward 2-1793

Pittsburgh 22.....738 Oliver Bldg., Atlantic 1-4707

St. Louis 8 .....3615 Olive St., Continental Bldg., Lucas 4867

SPECIALTIES . . . . .

dingies, lifeboats—are being tested by the British Admiralty. Advantages: they remain free of ship worm and rot deterioration.

Another plastic is being examined by the U.S. Navy. Ensolite, claimed to be superior to foam rubber and felt, is being tried for construction of helmets for pilots.

•

Versatile Element: Molybdenum gets around. In Florida, agronomists have discovered that lack of the element causes yellow spot in citrus fruit. Yellow spot, which in severe form causes leaf-drop can be halted by spraying with sodium molybdate; the ideal way to add it is to include it in a soil additive.

• And the disulfide continues to find use as a lubricant. Imperial Oil & Grease Co., Inc. (Los Angeles) is now producing a lubricating agent consisting of the disulfide in oil, tabs its product Molub-Alloy.

•

Plug: A new way to seal oil tank and line leaks was introduced last week by Lake Chemical Co. (Chicago): simply rub on a stick-form cement called Oyltite-Stik ($1.25). It's said to be unaffected by oils, temperature.

•

Wax Works: Molten wax—Glyco Products Co., Inc. (Brooklyn) recommends its Glycowax S-932—has been found helpful in relieving stresses of molded nylon parts. A heat transfer material such as the wax, at 350 F, can be used as an immersion bath until the stresses are removed.

• Another wax in the news is Warwick Wax Co.'s Cardis One, said to be the hardest emulsifiable petroleum wax on the market.

•

Bleachers Please Note: Colgate-Palmolive-Peet's Industrial Dept. is introducing a detergent aid for industrial and institutional work—an optical whitener called Colgate Laundry Brightener. One-two ounces of the product is recommended for each 100 pounds of laundry.

•

Sheets of Paper: But if the cigarette market vanishes, paper makers won't be at a loss for outlets. Brown-Bridge Mills, Inc. (Troy, O.), has developed a paper bed sheet. Waterproof on one side and perspiration-absorbent on the other, they are claimed to be inexpensive, odorless and rustle-less replacements for rubber sheets.

•

New Plant: Wica Chemicals, Inc., has been formed in Charlotte, N.C. The firm, capitalized at $100,000, will manufacture chemical products.

Important New "Tool" For The Metal Industry . . .

B&A FLUOBORIC ACID

While the Potentialities of Fluoboric Acid have long been known, only recently has Industry begun to recognize the multiple advantages this product offers in many fields. Its physical and chemical properties make B&A Fluoboric Acid of particular value in numerous metal cleaning and finishing operations.

Some of These—and other important uses—are high-lighted below. Perhaps B&A Fluoboric Acid holds equal promise in *your* operations. For further information, check applications that interest you and return coupon clipped to your company letterhead.

SOME IMPORTANT USES FOR FLUOBORIC ACID

• ***Metal Cleaning and Pickling***—to remove oxide film and smut from many metals. For example: for cleaning aluminum before spot welding; cleaning soldered joints before silver, copper, nickel or brass plating; dipping lead and lead alloy parts such as slushing castings, stereotype metal and bearing metals; removing light oxide film from steel before plating; cleaning aluminum or zinc die-castings before copper or brass plating; cleaning zinc after stripping; pickling tin before plating with copper or nickel.

• **Metal Finishing**—as a matte pickle for zinc; satin dip for brasses and bronzes; plating bath control where metal fluoborate solutions are used.

• **Electropolishing of Aluminum**—to produce mirror-like surfaces such as those on light reflectors.

• **Dissolving and Stripping Metals**—effective with an unusually wide range of metals; has particular merit where other acids are ineffective—as in stripping nickel and silver from racks, removing excess solder, etc.

• **Other uses:**
As an Electrolyte for Low Temperature Batteries.
With Tin Fluoborate for Sensitizing Plastics Prior to Plating.

SPECIAL!

Now Also Available in New 13-Gallon Plastic Carboy

In addition to standard 125 lb. rubber drums, B&A now offers Fluoboric Acid in the same revolutionary new plastic carboy introduced last year for its reagent Hydrofluoric Acid. This carboy provides many important advantages . . .

Purity Protected—Product quality is safeguarded by inert polyethylene bottles.

Strong and Sturdy—Reduce handling and storage hazards. Bottle molded of tough, resilient, shatter-proof polyethylene; enclosed in weather-resistant jacket.

Economical—Save on freight. 13-gallon carboy has only 26 pound tare weight.

Compact—Store more acid in less space. 13-gallon cylindrical carboy is only 15 inches in diameter, stands 34 inches high.

Easier to Open and Pour—Screw-type plastic cap plus special pour-clean bottle lip makes opening, pouring, and reclosure easy; safeguards against spillage.

REAGENTS

B&A

STANDARD OF PURITY

FINE CHEMICALS

BAKER & ADAMSON *Fine Chemicals*

GENERAL CHEMICAL DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

Please send me further information on B&A Fluoboric Acid for uses checked.

☐ **Metal Cleaning and Pickling** ☐ **Metal Finishing** ☐ **Electropolishing of Aluminum**

☐ **Dissolving and stripping Metals** ☐ **Other uses** _____ (please indicate)

_____

NAME _____ **TITLE** _____

COMPANY _____

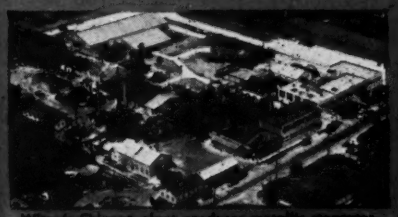
ADDRESS _____ **CW-2**

CLIP COUPON to your company letterhead and mail today!

5 reasons why Witco

is a dependable source of supply for many of your chemical needs*

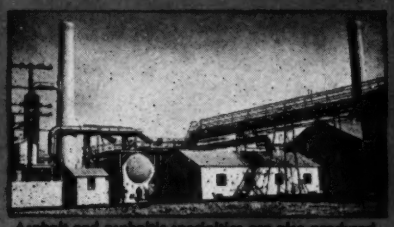
1. 8 modern plants.
2. Strictest quality control to assure purity and uniformity.
3. Skilled, highly trained personnel.
4. Maximum technical service.
5. Long experience in serving the chemical industry.



Witco's Chicago plant produces metallic stearates, driers, vinyl stabilizers, fatty acid esters, gelling agents and other chemicals.

Some of these products are also produced in Witco's plant at Brooklyn, N. Y.

At Perth Amboy, N. J., Witco manufactures asphalt and asphaltic products of many different kinds.



Asphalt and asphaltic specialties are also produced in Witco's Pioneer Asphalt Division plant at Lawrenceville, Ill.

Here are a few of the many chemicals and chemical products manufactured by WITCO...

- Aluminum Octoate
- Asphalt
- Asphalt Specialties
  - Automobile Undercoatings
  - Rust Preventives
  - Sound Deadeners
  - Vibration Dampeners
- Carbon Blacks
- Copper Hydroxy Naphthenate
- Copper Linoleate
- Copper Naphthenate
- Copper Oleate
- Driers
  - Naphthenic Acid Driers
    - Lead-Cobalt-Calcium
    - Manganese-Zinc-Iron
  - Octoic Acid Driers
    - Lead-Cobalt-Zinc
  - Witall® (Tall Oil) Driers
    - Lead-Cobalt-Manganese
- Esters
  - Butyl Oleate
  - Butyl Stearate
  - Dibutyle Adipate
  - Dibutyl Phthalate
  - Methylcyclohexyl Stearate
- Lead Linoleate
- Lead Oleate
- Metallic Stearates
  - Aluminum
  - Lithium
- Metallic Stearates—*Continued*
  - Barium
  - Lithium Hydroxy
  - Cadmium
  - Magnesium
  - Calcium
  - Sodium
  - Copper
  - Strontium
  - Iron
  - Zinc
  - Lead
- Rubber Compounding Ingredients
- Vinyl Stabilizers
- Witco Gelling Agents
- Witco Gel Breakers

Write today for technical service reports on any of Witco's products. Samples available for your own evaluation.

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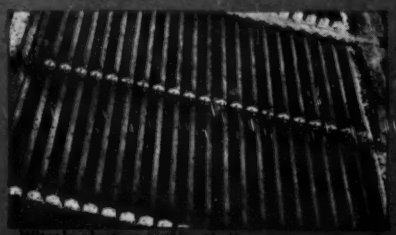

Witco's plant at Sunray, Tex., produces channel black. Channel and furnace blacks are also produced by Witco-Continental plants at Ennery and Big Lake, Texas, and at Westlake, La.